
STUDY MATERIAL

PROFESSIONAL PROGRAMME

**VALUATIONS & BUSINESS
MODELLING**

MODULE 3
PAPER 9.7



**THE INSTITUTE OF
Company Secretaries of India**

भारतीय कम्पनी सचिव संस्थान

IN PURSUIT OF PROFESSIONAL EXCELLENCE

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PROFESSIONAL PROGRAMME VALUATIONS & BUSINESS MODELLING

A business valuation provides the management of business with numerous facts and figures pertaining to the actual worth or value of the company in terms of market competition, asset values and income values. The key benefits of business valuation are: Better Knowledge of Company Assets; Understanding of Company Resale Value; Assistance during Merger & Acquisitions; Obtain a True Company Value and Access to More Investors.

With the surge in business activities, valuations have occupied the centre stage. Whether it is a start-up or a big corporate house, valuations is pervasive. Right from the setting up of the business entity, during its merger and acquisitions, for obtaining long-term finance from banks / financial institutions, winding-up and for various other business purposes, valuation is an integral component. There are various vital dimensions associated with the valuation- International Valuation Standards; Guidance to Valuation; Methods used in Valuation; Valuation of Tangibles and Intangibles; Valuation during Mergers & Acquisitions etc. In order to have a holistic approach on valuation and to surmount over valuation related matters, it is extremely essential that a professional needs to be conversant with the aforesaid elements of valuation.

Merely possessing the theoretical knowledge on the subject will not suffice as it is like a applied research wherein every element of valuation has a practical relevance. Moreover, depending on the magnitude, nature and scale of the business different valuation approaches needs to be embraced.

Another concept that has gained steam is Business Modelling. Despite presence of various resources, i.e. finance, human, material, technology etc. in abundance if the business organisation is devoid of a robust business model then either it may not attain the desired level of performance or collapse during turbulence. Perhaps financial giants like Lehman Brothers and other investment banks would not have collapsed due to the onslaught of global economic crisis had they were having sound business models.

Business models to be sustainable needs to be revised in light of the changing legal, business and economic environment. It needs to be developed by using scientific approach rather than rule of thumb. Approaches like, spreadsheet techniques, future projections, analysis of key financial ratios, cash flow analysis, estimation of maximum finance required, working capital management etc. may assist immensely in building a robust and sustainable business model.

Company Secretary Profession have witnessed a drastic metamorphosis. From a 'Glorified Clerk', they have attained the status of 'Governance Professionals'. In other words, the trajectory of the Company Secretary Profession have moved upward when one compares his / her role under Indian Companies Act, 1956 and Indian Companies Act, 2013. Without an iota of doubt it can be opined that Indian Companies Act, 2013 have been a game changer for the Company Secretaries.

Since the role of a Company Secretary in the capacity of a 'Registered Valuer' has been duly recognized under the Companies Act, 2013, consequently, it has added wings to the profession. An in-depth knowledge of the subject will definitely assist a Company Secretary-in-Making to explore career opportunities in the areas of Valuations and Business Modelling.

Days are gone when technical areas like valuation and business modelling were the forte of selected group of experts. Today, a Company Secretary is competent enough to undertake valuation related activities. In the era which is marked by soaring merger and acquisitions, particularly, cross-border merger and acquisitions, a

comprehensive knowledge of the subject will play a pivotal role in understanding the finer aspects of merger and acquisitions, like valuation of tangibles, valuation of intangibles etc. Similarly during winding-up process, there is a need for valuation of various assets and in absence of proper understanding on the key concepts of valuation, it will be next to impossible for a Company Secretary to execute the valuation process.

Any business be it of any magnitude, it can only attain excellence, when it is sustainable. For a business to be sustainable it needs a robust business model. Like on the rails the train runs and if the rails are of abysmal quality then there is a probability of derailment, similarly, if a company does not have a sound business model, then in the long run, the survival of the company may be difficult.

Further, in this dynamic business eon, where only constant thing is change, it is extremely important that business organizations change or develop new business models as and when the need arises. For instance, if a company is operating in an industry which is having an oligopoly form of market competition and due to entry of more firms, it transforms into monopolistic form of market competition, then the business organization may have to either change or start from the scratch its business model.

A Company Secretary being the 'Key Managerial Personnel' of the company and being an indispensable human capital of the company, it is essential that he / she must possess deep insights regarding various forms of business models, factors determining a robust business model, MS-Excel applications of various finance functions etc.

In view of the aforesaid matter, this subject will act as a 'Lighthouse' in guiding the Company Secretaries while performing valuation and business modelling related activities.

Although due care has been taken in publishing this study material, yet the possibility of errors, omissions and/ or discrepancies cannot be ruled out. This publication is released with an understanding that the Institute shall not be responsible for any errors, omissions and/or discrepancies or any action taken in that behalf. Should there be any discrepancy, error or omission noted in the study material, the Institute shall be obliged if the same are brought to its notice for issue of corrigendum in the e-bulletin Student Company Secretary. In the event of any doubt, students may write to the Directorate of Academics in the Institute for clarification at academics@icsi.edu.

There is open book examination for this Elective Subject of Professional Programme. This is to inculcate and develop skills of creative thinking, problem solving and decision making amongst students of its professional programme and to assess their analytical ability, real understanding of facts and concepts and mastery to apply, rather than to simply recall, replicate and reproduce concepts and principles in the examination.

PROFESSIONAL PROGRAMME

MODULE 3

ELECTIVE PAPER 9.7

VALUATIONS & BUSINESS MODELLING (MAX MARKS 100)

SYLLABUS

Objectives

Part I : To develop a reservoir of knowledge on valuation which can assist the Company Secretaries in undertaking valuation assignments as a Registered Valuer under Companies Act, 2013 including for Mergers and Acquisitions, Issue of Shares, Winding up of Business and during Distressed Sale.

Part II : To assist the student in comprehending the concept of Business Modelling, its vital components, steps involved in preparation of a Business Model and Business Models for varied magnitude of business organizations.

PART 1: VALUATIONS (70 MARKS)

Detailed Contents

- 1. Overview of Business Valuation :** Genesis of Valuation; Need for Valuation; Hindrances/ Bottlenecks in Valuation; Business Valuation Approaches; Principles of Valuation (Cost, Price and Value).
- 2. Purpose of Valuation :** M&A, Sale of Business, Fund Raising, Voluntary Assessment; Taxation; Finance; Accounting; Industry perspective; Statutory Dimension; Society Angle.
- 3. International Valuation Standards Overview.**
- 4. Valuation guidance resources in India.**
- 5. Business Valuation Methods:** Discounted Cash Flow Analysis (DCF); Comparable transactions method; Comparable Market Multiples method; Market Valuation; Economic Value Added Approach; Free Cash Flow to Equity; Dividend Discount Model; Net Asset Valuation; Relative Valuation; Overview of Option Pricing Valuations.
- 6. Steps to establish the Business Worth:** Planning and Data Collection; Data Analysis and Valuation including review and analysis of Financial Statements; Industry Analysis; Selecting the Business Valuation Methods; Applying the selected Valuation Methods; Reaching the Business Value Conclusion.
- 7. Valuation of Tangibles:** Overview of Valuation of Immovable Properties; Plant & Machinery; Equipments; Vehicles; Capital Work-in-Progress; Industrial Plots; Land and Buildings; Vessels, Ships, Barges etc.
- 8. Valuation of Intangibles:** Definition of Intangible Assets; Categorization of Intangibles- Marketing Related (Trademarks, Trade names, Certification marks, Internet domains etc.), Customer or Supplier Related (Advertising Agreements, Licensing, Royalty Agreements, Servicing Contracts, Franchise Agreements), Technology Related (Contractual or non-contractual rights to use: Patented or Unpatented Technologies, Data Bases, Formulae, Designs, Softwares, Process), Artistic Related (Royalties from artistic works: Plays, Books, Films, Music).
- 9. Accounting for share based payment (Ind AS102).**

10. **Valuation during Mergers & Acquisitions.**
11. **Valuation of various magnitudes of Business Organizations:** Large Companies, Small Companies, Start-Ups, Micro Small and Medium Enterprises.
12. **Valuation of Business during Distressed Sale.**

PART- II: BUSINESS MODELLING (30 MARKS)

13. **Introduction to Business Modelling :** Genesis, Meaning; Features; Significance; Usage; Spreadsheet Techniques (Effective use of spreadsheets for modelling, Review of key Excel Functions like building Macros, Decisions involving Time Value of Money); Report and analyze historical data, Prepare future projections and present integrated financial statements, Key financial ratios and Outputs in a logical, summarized and effective manner.
14. **Business Model Analysis: Facets of Analysis :** Revenues: Cash flows and their timing and Revenue drivers, Expenses: Cash flows and their timing, Investment required through cash flow breakeven: Working Capital, Maximum financing required and cash flow breakeven timing, Sensitivity Analysis: Key success factors, Structuring and designing models.

LESSON WISE SUMMARY

VALUATIONS & BUSINESS MODELLING

Lesson 1: Overview of Business Valuation

Valuation has gained paramount significance in business arena. With the evolution of various forms of business organizations, especially, company form of business organization, valuation has occupied the centre stage. Valuation has become pervasive, i.e. whether during commencement of business, expansion, merger and acquisitions, winding-up etc. valuation are imperative. This study lesson has made an endeavour to throw light on crucial elements of business valuation- Genesis of Valuation; Need for Valuation; Hindrances in Valuation; Business Valuation Approaches etc. After reading this lesson the reader will be conversant with fundamentals of valuation.

Lesson 2: Purpose of Valuation

Valuation is applicable to various business events, i.e. mergers and acquisitions, sale of business, procurement of funds, taxation etc. Unless and until the key managerial personnel are thorough with the valuation processes involved in the mentioned business events, it will be extremely difficult for them to discharge their professional obligations. Further, various business events demand a different approach of valuation.

This lesson have made an attempt to encompass the critical concepts whose understanding is needed to execute the assignments relating to mergers and acquisitions, convincing banks and financial institutions at the time of raising finance to meet working capital and long-term capital requirements, handle taxation related matters, to meet various statutory requirements etc.

Lesson 3: International Valuation Standards Overview

Like accounting standards, international valuation standards are also an integral component of business transactions. A comprehensive knowledge of international valuation standards is needed for undertaking valuation assignments requiring generally recognized concepts and principles that foster transparency and consistency in valuation process. Along with other important concepts, the critical areas, i.e. bases of value and valuation approaches and methods which are like a fulcrum of valuation process have been duly focused upon.

In view of this, this lesson has focussed on three dimensions – International Valuation Standard (IVS) framework, International Valuation Standard (IVS): General Standards and International Valuation Standard (IVS): Asset Standard.

Lesson 4: Valuation Guidance Resources in India

Valuation activities have engulfed almost all the sectors of Indian economy. Be it Power, Banking and Financial Services, Steel, Coal, Cement, Fertilizer, Textile etc. valuation has entered their DNA. Most of the companies in various sectors are going for mergers and acquisitions, expansion, diversification as well as winding-up and all these business activities cannot be imagined without valuation.

Quite recently the innovative business concept of Start-ups have gained steam and so their valuation. Further, valuation of public sector enterprises has also gained prominence, especially after disinvestment of public sector enterprises. Thus, this lesson has delved deep into various Indian Valuation Standards.

Lesson 5: Business Valuation Methods

Mere theoretical knowledge about valuation is not sufficient. A professional or senior management official undertaking valuation process needs to be acquainted with various methods used in valuation. Keeping this pertinent point in view, this lesson have covered various business valuation methods, like, Discounted Cash Flow Analysis (DCF); Comparable Transactions Method; Comparable Market Multiples Method; Economic Value Added Approach; Free Cash Flow to Equity etc.

Since various methods are applied depending upon the sector to which a company belongs to, economic, business and legal scenario, events giving rise to valuation etc. a complete understanding of various business valuation methods is a must.

Lesson 6: Steps to Establish the Business Worth

How to establish the value of a business is a million dollar question. Establishing of business worth involve several factors, like, planning and data collection, data analysis including analysis of financial statements, industry analysis, choosing the appropriate business valuation methods etc. Further, each factor requires robust understanding as all the factors are interlinked.

Since how much a business is worth is a fundamental issue in valuation, in view of this, the lesson has covered various practical aspects pertaining to establishing of business worth.

Lesson 7: Valuation of Tangibles

Tangible assets are key to business operations. Whether an organization is engaged in production of goods or services, tangibles occupy a significant place. In absence of tangible assets it will be impossible to perform production and trading of goods or services. There are various facets of tangible assets, like cost / value, methods of valuation of tangible assets etc. These and other critical facets associated with valuation of tangibles have been taken into account. Due emphasis have been given on valuation of certain important tangibles like, Real Estate, Plant & Machinery, Vehicles and Ships & Barges.

Lesson 8: Valuation of Intangibles

Valuation involves analysis of a company and so intangible assets cannot be ignored. Various intangible assets like, trademark, certification marks, designs etc. are considered as important assets since they assist immensely in enhancing sale of the business. It can be said without an iota of doubt that brands, technologies, formulae, softwares etc. are crucial to company's success. Keeping this vital point in view, this lesson has focused upon almost all forms of intangible assets.

Lesson 9: Accounting for Share Based Payment (Ind AS 102)

Indian Accounting Standard acts as a lighthouse for the companies in treatment of various business transactions. In this regard, one of the crucial financial treatments pertains to share based payment. Ind AS 102 prescribes financial reporting in respect of share-based benefits and is relevant for companies which remunerate their employees by share-based (or stock option) schemes, such as Employee Stock Options (ESOP), Share Appreciation Rights (SAR), Phantom Equity, Share Purchase Plans (SPP) etc.

This lesson have given emphasis on equity-settled share based payment transactions, transactions in which services are received, hurdles or bottlenecks in evaluation of the fair value of the equity instruments etc.

Lesson 10: Valuation during Mergers & Acquisitions

Mergers and acquisitions have become a buzzword in business scenario. Now a day most of the sectors are witnessing merger and acquisitions. It is a complex process and valuation plays a pivotal role in it. Valuation

of the target company involves several critical processes. Depending on the scale of operations and nature of business of the target company the valuation approach needs to be chosen.

This lesson has touched upon various significant concepts pertaining to mergers and acquisitions- Types of values, M &A strategy, Theories of Merger & Acquisitions, Methods used in valuing the target company etc.

Lesson 11: Valuation of Various Magnitudes of Business Organizations

There are various forms of business organizations operating in varying scales. But valuation is omnipresent and so irrespective of the size of the business organization it is used. Keeping in view its applicability for various magnitudes of business organizations, this lesson has covered the valuation of large companies, private companies, start-ups and micro, small and medium enterprises.

Lesson 12: Valuation of Business during Distressed Sale

With the evolution and growth of business organizations, winding-up have also become a common phenomenon. Several corporate houses which even after embracing corporate restructuring failed to revive the business are left with no option other than distressed sale of business. Firms in financial distress cannot meet, or have difficulty paying off their financial commitments to their creditors, typically due to high fixed costs, illiquid assets or revenues that are sensitive to economic downturns.

It is critical to identify the nature of distress. The optimal course of action for companies facing irreversible economic distress is liquidation of assets. But sale involves valuation of the business. No doubt, there are various valuation methods to gauge the value of the business but at times of distress the valuation is altogether a different ball game.

Lesson 13: Introduction to Business Modelling

Business models provide the trajectory to the business activities. In absence of a robust business model, the best business organizations may also witness an untimely collapse. Further, while developing a business model, the following vital facts needs to be at the focal point- Diversity, Modularity, Openness, Slack resources, Matching cycles, Identify your specific audience, Establish business processes, Develop a strong value proposition, Determine key business partners and Leave room for innovation.

In view of the paramount significance business modelling holds, this lesson have focused on critical topics, i.e. various forms of business models, significance of business modelling and process involved in building spreadsheet based decision model.

Lesson 14: Business Model Analysis

Merely construction of a business model will not suffice. It is just the first step. Going further, a business model needs to be analysed from various angles. For instance, if a business model fails to generate adequate revenue or cash flows from a project then it cannot be termed as an ideal business model.

Thus, keeping in view the significance of business model analysis, this lesson has focused upon important dimensions, like, Dynamic and Non-dynamic aspects of business models, Timing of cash flows and Revenue Drivers, Working capital management, Maximum finance required, Sensitivity analysis etc.

LIST OF RECOMMENDED BOOKS

Paper 9.7: Valuations & Business Modelling

- 1) McKinsey & Company : Valuation: Measuring and Managing the Value.
- 2) Aswath Damodara : The Little Book of Valuation: How to Value a Company, Pick a Stock and Profit.
- 3) Registered Valuers : Study Material for Educational Course- Asset class: Organisation (A wholly Securities or Financial Assets. owned subsidiary of ICSI and registered with IBBI)
- 4) David Parker : International Valuation Standards: A Guide to the Valuation of Real Property Assets.
- 5) Kamal Garg : Valuation by Registered Valuers under Companies Act, 2013 & Insolvency & Bankruptcy Code, 2016.
- 6) D.N.Banerjee : Principles and Practice of Valuation
- 7) McKinsey & Co. : Valuation measuring value of Companies
- 8) Benjamin Graham : The Intelligent Investor
- 9) Krishna Palepu : Business Analysis and Valuation
- 10) Stanley Feldman : Principles of Private Firm Valuation
- 11) David Parker : International Valuation Standards: A Guide to the Valuation of Real Property
- 12) Blair Macdonald : Business Valuations- A Guide to Business Valuation
- 13) Graham Friend and John Tennent : Guide to Business Modelling
- 14) Bob Vause : Guide to Analysing Companies.
- 15) Corporate Professionals : Business Valuation in India – Beyond the Numbers (2018)

Journals

1. e-Bulletin : The ICSI, New Delhi
(Student Company Secretary)
2. RVO Connect : Newsletter for Valuation Professionals.
3. Chartered Secretary (Monthly) : The ICSI, New Delhi
4. Vikalp : IIM Ahemadabad
5. Decision : IIM Calcutta

Note:

1. Students are advised to read the above journals for updating the knowledge.
2. Students are advised to read/refer the latest editions of the recommended books.

ARRANGEMENT OF STUDY LESSON

Module-3 Paper-9.7

VALUATIONS & BUSINESS MODELLING

Sr. No.	Lesson Title
Part I- Valuations (70 Marks)	
1.	Overview of Business Valuation
2.	Purpose of Valuation
3.	International Valuation Standards Overview
4.	Valuation Guidance Resources in India
5.	Business Valuation Methods
6.	Steps to Establish the Business Worth
7.	Valuation of Tangibles
8.	Valuation of Intangibles
9.	Accounting for Share based Payment (IND AS 102)
10.	Valuation during Mergers & Acquisitions
11.	Valuation of various Magnitudes of Business Organizations
12.	Valuation of Business during Distressed Sale.
Part II- Business Modelling (30 Marks)	
13.	Introduction to Business Modelling
14.	Business Model Analysis

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Lesson 1

Overview of Business Valuation

LESSON OUTLINE

- Introduction
- Genesis of Valuation
- Areas Where Valuation is Used
- What is the Purpose of the Valuation?
- What is the Subject of the Valuation?
- Need for Valuation
- Various Expression of Value
- Relationship Among Different Types of Value
- Purposes of Valuation and Impacts on the Value Estimates
- Hindrances /Bottlenecks In Valuation
- Business Valuation Approaches
- Principles of Valuation
- Sources of Information for Valuation
- Public Sector Valuation
- SUMMARY
- SELF TEST QUESTIONS

LEARNING OBJECTIVES

Valuation of business plays a very vital role, therefore a business owner or individual may need to know the value of a business. The fair market value standard consists of an independent buyer and seller having the requisite knowledge and facts, not under any undue influence or stressors and having access to all of the information to make an informed decision. Valuation is a vital subject which will be used in different areas like merger & acquisition, amalgamation, dispute resolution etc. After studying this chapter you will be able to understand:

- What is the meaning of valuation?
- Why do we need to do valuation of a business?
- Identifying the areas where valuation can be used
- Identifying the purpose of valuation and its impact on the value estimates.
- Estimating the objectives of valuation.
- What are the main hindrances in value estimates of a business?
- Learning the practical dimension of business valuation approaches.
- Learning the main principles of valuation.
- Identifying the main sources of information for valuation.

ORIENTATION

It is a compulsory lesson in the subject. Its deep knowledge is essential to strengthen the understanding of the various technical concepts that are discussed in the ensuing lessons. This study lesson encompasses all the concepts that are required to build the base for further learning.

FAMILY TREE OF CONCEPTS



INTRODUCTION

Valuation is a process of appraisal or determination of the value of certain assets: tangible or intangible, securities, liabilities and a specific business as a going concern or any company listed or unlisted or other forms of organization, partnership or proprietorship. 'Value' is a term signifying the material or monetary worth of a thing, which can be estimated in terms of medium of exchange. In other words, it is an assessment resulting in an expression of opinion rather than arithmetical exactness.

Business valuation requires a working knowledge of a variety of factors, and professional judgment and experience. This includes recognizing the purpose of the valuation, the value drivers impacting the subject company, and an understanding of industry, competitive and economic factors, as well as the selection and application of the appropriate valuation approach (es) and method(s).

Recently, valuation has become a source of political and economic debates in the wake of privatization of state owned enterprises. Many owners and managers often ask, "How much is our business worth? And how much is theirs?" Due to increasing sophistication in business and changing economic and social environment of business, professional valuers face questions like:

1. “What is our business worth?”
2. “What is their business worth?”
3. “What is the right price of that company?”
4. “What is the right price of our company?”

Actually, there is hardly any acceptable answer to these above listed questions. To give the answer of these questions there is a evolution of “valuation theory”. There is a misconception that the valuation of companies has been developed as an art rather than a science, and that valuation is the job of accounting firms. But the truth is that valuation procedures are driven heavily by tradition. Valuers have taken extreme positions towards the methodology of corporate valuation. They may still like to continue to do so as they have done in the past. These extreme considerations can lead to a broad variety and wide range of values. Vast differences in values can act as negative to the credibility of valuation profession. Hence, valuers must explain the difference between their own estimates of value and that of other professionals estimates.

Some of the main objectives of corporate valuation are to:

1. Assist a purchaser or a seller in deciding the acceptable purchase consideration
2. Assist an arbitrator in settling a dispute between parties
3. Assist a lender in quantifying the security for loan.
4. Establish value for stamp duty.
5. Quantify a value for inclusion in accounting records
6. Assess a consequential loss claim
7. Assess a management buyout or a leveraged buyout.

GENESIS OF VALUATION

Valuation may be considered a science but, to a large extent, valuation variables require inherent subjectivity. In other words, valuation is not a precise science as there is always imperfection in the market. Even in rare instances, where the valuer has perfect knowledge of the market, the market does not have the perfect knowledge of value as well as the valuation methodology and process. On every occasion, there may not be a definitive valuation method or a definitive value conclusion, but every valuation is based only on its circumstances. Right valuation requires logical and methodical approach and careful application of the basic principles. This means that there may not be a prescribed format or a preferred methodology, which is to be adopted always.

Today business valuers need to be better educated in order to make business valuation theory and practices better explained and better defined. The act of business valuation, therefore, needs to be more of a science than perception and guess. Enhanced credibility of the valuation process requires establishing various estimates of values with minimum most possible range between the highest and lowest values arrived at though various methods. A better valuation exercise has the following characteristics:

1. Realistic and acceptable value conclusion
2. Application of convincing methods to arrive at the value conclusion
3. Transparency of the valuation process
4. Realistic consideration of factors responsible for valuation
5. Ensuring unbiased considerations and avoiding short-cut attempts

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6. Validation under critical scrutiny
7. Meticulous work of a group of professionals representing various disciplines such as finance, accounting, economics, engineering, and investment banking
8. Comprehensive and detailed valuation report justifying fairness of opinion and accepted as an expert testimony

Everyone has an opinion of value about a business, a tangible asset, or an intangible asset but actually, the term 'value' means different things to different people. The problems faced by the valuers are enormous. They have to bring forward an appropriate definition of value for a specific valuation. The Webster's dictionary puts value as:

A fair return or equivalent in goods, services, or money for something exchanged: the monetary worth of something: marketable price; relative worth, utility, or importance: something intrinsically valuable or desirable.

Any business valuation activity is based on the hypothetical consideration that there is an arms length sale of a business between a willing buyer and a willing seller, usually for cash. Any valuation theory attempts to search for truth and relates to the practice in order to understand valuation theory. Valuation concepts must be understood clearly and be applied too. For the purpose of valuation of an entire or a partial entity, both quantitative and qualitative tangible and intangible factors are to be taken into consideration. To establish the value of specific tangible assets, it requires special market knowledge, education, and training for the valuer or appraiser. To perform a good valuation, the valuer must obtain opinion and information from specific experts as the construction, efficiency, power consumption make, risk of obsolescence, factors affecting future economic use, and so on.

One of the frequent sources of legal confusion between cost and value is the tendency of courts, in common with other persons, to think of value as something inherent in the thing being valued, rather than an attitude of persons toward that thing in view of its estimated capacity to perform a service. Whether or not, as a matter of abstract philosophy, a thing has value except to people to whom it has value, is a question that need not be answered for the sake of appraisal theory. Certainly for the purpose of a monetary valuation, property has no value unless there is a prospect that it can be exploited by human beings.

In a business valuation, the value of an interest in business is typically considered to be equal to the future benefits that are to be received from the business, discounted to the present value, at an appropriate discount rate. However, this simple definition of value raises the following issues to be addressed:

1. How to define 'benefits'?
2. Future projections may be extremely difficult to make and also very difficult to get interested parties to agree to.
3. What is an appropriate discount rate?

For what period of time the stream of benefits should be included in the determination of value?

Indian activities in the arena of mergers and acquisitions have indeed increased manifold over the last one decade. According to India Brand Equity Foundation, the trust run by the Union Ministry of Commerce and Confederation of Indian Industry (CII), outward investment to the tune of \$80 billion has been made between the years 2000 and 2010; the UK and the US have emerged as the favoured destinations.

A CII survey report shows that Indian companies actually helped save and create thousands of jobs in the US through acquisitions of local firms there. It reports that since the year 2005, nearly 65 per cent of the Indian companies operating in the US have added jobs to their operations; more than 80 per cent of the hiring was local.

Some of the significant M&A deals involving Indian companies during the period 2001-2010:

The TATA Group

In February, year 2000, The Tetley Group, the world's second largest producer and distributor of tea, was purchased by India's Tata Group for British £ 271 million. In the year 2004, Tata Motors acquired Daewoo's truck manufacturing unit in South Korea. In the year 2005, Tata Motors acquired 21 per cent of Aragonese Hispano Carrocera giving it controlling rights of the company. In January 2007, Tata Steel purchased a 100 per cent stake in the Corus Group at 608 pence per share in an all cash deal, cumulatively valued at US \$12.04 billion, fending off a serious challenge from CSN, the Brazilian steel maker. The deal marked the 22 largest Indian takeover of a foreign company and made Tata Steel the world's fifth-largest steel group. In June 2008, Tata Motors acquired British Jaguar Land Rover (JLR), which includes the Daimler and Lanchester brand names, from Ford for US \$2.3 billion. In April 2011, Tata Chemicals acquired a 25.1 per cent stake in an ammonia-urea fertilizer complex in Gabon for US \$ 290 million in which Singapore-based agro-product processor and supplier Olam International owns a 63 per cent stake and the Republic of Gabon holds 12 per cent stake. The company will be acquiring the stake as a strategic investor and is likely to invest another US \$ 170 million in the second phase of expansion of the fertilizer complex. (please check whether the investment have of US \$170 million have been already made or it will be made, as in case the investments have been already done then the sentence needs to be written in past tense).

Aditya Birla Group

In February, year 2007, the Aditya Birla Group's Hindalco entered into an agreement to acquire Canadian company Novelis for US \$ 6 billion, making the combined entity the world's largest rolled aluminum producer. The Group also owns copper mines in the Great Sandy Desert, Western Australia and the Mt. Isa Block in Queensland.

UB Group

United Spirits Ltd (USL), the flagship of the UB group and the world's third largest spirits producer, purchased the Scottish distiller Whyte and Mackay in May 2007 for British £ 595 million. This included brands like The Dalmore, Isle of Jura, Glayva, Fettercairn, Vladivar Vodka and Whyte & Mackay Scotch. In the year 2006, Asian Opportunities and Investments Limited, UB's wholly owned subsidiary in Mauritius, announced the acquisition of French wine maker Bouvet Ladubay for € 14.75 million.

Industrial Revolution of England and France

The industrial revolution began in Great Britain in the late 1770s before spreading to the rest of Europe. The first European countries to be industrialized after England were Belgium, France and the German states

The rest of Europe didn't industrialize until after 1850. Spain, Portugal, Austria-Hungary, Italy and the Ottoman Empire started to industrialize very late in the 19th century.

Belgium was the second country in Europe in which the industrial revolution took place and the first nation in continental Europe. Belgium became the world's second industrial power, after Britain.

In France, industrialization was slower, due to its lack of coal and iron. By the end of the 19th century, the majority of French workers were still employed in non-manufacturing jobs. When France did fully industrialize, textile and furniture manufacturing became the dominant industries.

In Germany, industrialization was also slow, due to the region being divided into several independent states rather than a unified country, but Germany eventually became a global leader in chemical research in industrial and university labs.

Germany now has the fourth largest economy in the world, while Great Britain's economy is fifth, France is seventh and Italy is ninth.

Industrial Revolution in India

The industrial revolution came late to India, due to its complicated political and economic relationship with Great Britain.

Although India, which was a British colony, dominated the global cotton textile markets in the 18th century, the Indian textile industry took a hit when the industrial revolution began in Great Britain.

The use of steam power in British mills reduced the cost of British cotton by 85 percent, making its textile goods internationally competitive for the first time. Britain quickly became a leading world exporter of textiles, displacing India in the process.

In addition, in order to protect its new textile industry, Great Britain began to restrict textile imports from India and other countries by establishing tariffs and other protective policies. Great Britain instead began to export its own textiles to India.

This halted any plans Great Britain may have had to develop India's textile industry and instead led to India's deindustrialization, with British lawmakers pushing the country to become more agrarian than industrial.

New colonial laws forced Indian farmers to devote most of their fields to cotton crops, instead of food, which led to widespread famine and poverty in India.

Therefore, the industrial revolution reversed India's economic relationship with Great Britain so that it was now merely a supplier of raw materials for Great Britain and an importer of British textiles, instead of a producer of textile goods.

As a result, it took decades before India started adopting modern industrial practices, such as steam power and mechanized spinning and weaving, in its textile manufacturing.

The industrial revolution finally came to India in 1854, when the first steam-powered cotton mill in Asia opened in Bombay. Growth was slow though and the expansion of these modernized cotton mills didn't pick up until the 1870s and 80s.

Significance of Valuation in M&A Process

In a merger or acquisition transaction, valuation is essentially the price that one party will pay for the other, or the value that one side will give up to make the transaction work. Valuations can be made via appraisals or the price of the firm's stock if it is a public company, but at the end of the day valuation is often a negotiated number.

Valuation is often a combination of cash flow and the time value of money. A business's worth is in part a function of the profits and cash flow it can generate. As with many financial transactions, the time value of money is also a factor. How much is the buyer willing to pay and at what rate of interest should they discount the other firm's future cash flows?

Both sides in an M&A deal will have different ideas about the worth of a target company: its seller will tend to value the company at as high of a price as possible, while the buyer will try to get the lowest price that he can.

NEED FOR VALUATION

Valuation of business plays a very vital role, therefore a business owner or individual may need to know the value of a business. The fair market value standard consists of an independent buyer and seller having the requisite knowledge and facts, not under any undue influence or stressors and having access to all of the information to make an informed decision.

A business valuation is a complex financial analysis that should be undertaken by a qualified valuation professional with the appropriate credentials. Business owners who seek a low cost business valuation

are seriously missing out on the important benefits received from a comprehensive valuation analysis and valuation report performed by a certified valuation expert. These benefits help business owners negotiate a strategic sale of their business, minimize the financial risk of a business owner in a litigation matter, minimize the potential tax that a business owner or estate may pay in gift or estate tax as well as provide defense in an audit situation.

The necessity for valuation arises for statutory as well as commercial reasons:

- (i) Assessment under Wealth tax act, Gift tax act.
- (ii) Formulation of scheme for amalgamation.
- (iii) Purchase and sale of shares of private companies.
- (iv) Raising loan on the security of shares.
- (v) For paying court fees.
- (vi) Conversion of shares.
- (vii) Purchase of block of shares for the purpose of acquiring interest or otherwise in another company.
- (viii) Purchase of shares by the employees of the company where retention of such shares is limited to the period of their employment.
- (ix) Compensation to the shareholders by the government under a scheme of nationalization.
- (x) Acquisition of shares of dissenting shareholders under a scheme of reconstruction.

Normally a stock exchange is the most common source of ascertaining the value of shares especially for transactions involving small block of shares which are quoted on stock exchanges. But stock exchange prices form an unreliable basis because prices on a particular day are generally determined on the basis of demand and supply which are influenced by factors outside the business.

The wide fluctuations in prices of shares at the stock exchange are the outcome of actions and opinions of the private and institutional investors all over the country and indeed the world.

Thus the valuation of shares has to be done by the accountant by adopting sound and reasonable basis of valuation. Various tax laws make specific provisions regarding the valuation of shares and lay down either the general principles or the exact procedures that needs to be followed.

The other key areas where valuation is needed are- Mergers & Acquisitions and Succession Planning.

1. *Mergers & Acquisitions*: Valuation is an important aspect in M&A. It not only assists business owners in determining the value of their business, but also helps them maximize value when considering a sale, merger, acquisition, joint venture, or strategic partnership.

Valuation is often a combination of cash flow and the time value of money. A business's worth is in part a function of the profits and cash flow it can generate. As with many financial transactions, the time value of money is also a factor. How much is the buyer willing to pay and at what rate of interest should they discount the other firm's future cash flows?

Both sides in an M&A deal will have different ideas about the worth of a target company: its seller will tend to value the company at a higher price, while the buyer will try to acquire the company at the lowest price.

2. *Succession Planning*: In planning for the transfer of family business to the next generation.

Succession to employees: For many closely held businesses, the sale of the business to one or more key employees is often a viable succession strategy.

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Succession to outside parties: It comprises of mergers, acquisitions, purchase and sale of businesses.

One of the key factors in the valuation of a business is reasonable compensation of the owner(s) who plays an active role in the operations of the business. A discussion regarding the fact that the owner is overpaid for the services they render to the business is a difficult conversation. Bringing the owner to the understanding that such a circumstance actually results in a higher valuation seems to be counter-intuitive to the owner and often offense is taken at the premise: "You are overpaid." This is an example of the "de-personalization" that must take place for the successful transfer of a business from the founder to the next generation.

3. *Going Public:* In general, when a new company goes for an Initial Public Offering (IPO), for raising capital for setting up of business operations and to meet other long-term financial requirements, in such a circumstance, a question arises as to how to evaluate the fair value of the stock. The Indian Capital Market follows a free pricing regime and thus the accurate pricing of an IPO is of immense importance.

Example: The process of *going public* often begins when a young company needs additional capital to grow its business. In order to gain access to that capital, the firm will sometimes choose to sell an ownership stake or shares of stock to outside investors.

- ***IPO of Reliance Power in Year 2008:*** This IPO was sold between January 15 and January 18 of 2008 and was subscribed about 70 times. Before Coal India, this IPO enjoyed the status of the 'biggest IPO ever' title. But the Rs 11,560 crore issue had another distinction
4. *Dispute Resolution:* Valuations are an increasingly important aspect of many commercial disputes. Before deciding how to manage a dispute, it is necessary to determine the likelihood of a successful outcome and the potential stake involved. Judicial precedents are also available that affect the selection of valuation methodologies and applicability of discounts/ premiums.

For example, updating the current *Market valuation for tax purposes*, publication to outline various dispute resolution mechanisms, including the availability of expert valuer conferencing etc.

The subject of the valuation is of vital importance to the valuation process, the selection of inputs, approach and method. Valuing the invested capital or common equity of a business, options, hybrid securities, or some other form of financial interests in a business require the application of specific valuation methods, that are tailored to reflect their specific attributes. Additional complexities arise when one valuation may be required as an input to perform another. For instance, a business valuation may serve as an input or a distinct step in the valuation of stock options, preferred stock, or debt.

Preference Shares have the qualities of both a stock and a bond, which makes valuation a little different than a common share. The owner of the preferred share is part owner of the company, just common shareholder. The stake in the company is in proportion to the held stocks. Also, there is a fixed payment which is similar to a bond issued by the company. The fixed payment is in the form of a dividend and will be the basis of the valuation method for a preferred share. These payments could come quarterly, monthly or yearly, depending on the policy stated by the company.

A business interest (ownership interest in a business), on the other hand, may be characterized by various rights and preferences such as voting rights, liquidation preferences, redemption provisions, and restrictions on transfer, each of the element exerting an impact on the measurement of value.

Apart from the above significant reasons for valuation, there are many other reasons why a business owner or individual may need to know the value of a business. The typical standard of value used is fair market value. The fair market value standard consists of an independent buyer and seller having the requisite knowledge and facts, not under any undue influence or stressors and having access to all of the information to make an informed decision.

The reasons mentioned below highlights the significance of business valuation for the business owners:

- To set a basis of value for a business when no valuation has been previously performed.
- To understand the value (worth) of the business.
- To set a base line value for the business and develop a strategy to improve the profitability of the business and increase the value of the business for an exit strategy.
- To evaluate an offer and negotiate a strategic sale of a business.
- To determine the annual per share value of an Employee Stock Ownership Plan (ESOP).
- For exit strategy planning purposes.
- To value a portfolio of IP – patents, trademarks, copyrights, proprietary processes, etc.
- To justify the per share equity value in a company for annual shareholder meetings.
- To identify weaknesses in a business to refocus the operational efforts to improve profitability and the bottom line.
- For shareholder or partnership disputes.
- For shareholder or partnership investments or buyouts.
- To determine the potential built-in-capital-gains tax in a conversion from a C-Corporation to S-Corporation.
- For buy-sell purposes and funding the agreement.
- To obtain bank financing or alternative investment.
- For financial reporting purposes – to allocate the purchase price to appropriate equity classes and determine if there is any goodwill impairment.
- To allocate the purchase price after an acquisition of a business.
- For estate tax reporting purposes of a decedent.
- For gift tax planning purposes – transferring an interest to family members, donation to a charity, transfer to an intentionally defective grantor’s trust, etc.
- To determine the value of the assets in a marital dissolution action.
- To value stock options, restricted stock or phantom stock plans that a Company has in place to comply with IRC 409A.
- To value a business for a business bankruptcy.
- To determine the IP value in a business.
- For litigation support purposes, to determine economic damages, lost profits, uncover fraud or value of a business in a shareholder or partnership dispute, IP damage from infringement, etc.
- To determine the intrinsic value of a business and assess whether it is different from the fair market value of the business.
- To identify whether the business is growing, stagnant or declining in value for undertaking business restructuring activities.

Identifying the purpose of the business valuation is a first step in the process as it dictates the “basis of value” or “standard of value” to be applied, which, in turn, impacts the selection of approaches, inputs and assumptions considered in the valuation. The purpose of a valuation could be for acquisition or sale, litigation, taxation,

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insolvency, or financial reporting, to name a few. Once the purpose is identified, the appropriate standard of value can be applied. For example, a tax valuation for U.S. tax reporting generally requires fair market value, defined by U.S. tax regulations and further interpreted by case law while financial reporting requires fair value as defined by U.S. and IFRS accounting standards as a basis of value. While all valuations, regardless of purpose, share certain common attributes, there are differences that need to be reflected in the analysis pursuant to the basis of value.

Purpose of Valuation: Indian considerations

Valuation has been debated in India as an art or science and substantial part of the litigation in Mergers & Acquisitions (M&A) takes place on the issue of valuation as it involves an element of subjectivity that often gets challenged. More so, as in India, there are not many regulations prescribed for business valuation specifically for unlisted and private companies. In many cases the valuation lacks the uniformity and generally accepted global valuation practices. Even limited judicial guidance is available over the subject in India. Further, absence of any stringent course of actions and absence of regulations under various statutes is also leading to loose ends.

Institute of Chartered Accountants of India (ICAI) has recently developed and recommended Business Valuation Practice Standards (BVPS) aiming to establish uniform principles, practices and procedures for valuers performing valuation services in India.

The introduction of concept of Registered Valuer had been notified under Chapter XVII of the Companies Act 2013 to set the Indian valuation standards for standardizing the use of valuation practices in India, leading to transparency and better governance.

Although the primary purpose of business valuation is preparing a company for sale, there are many other purposes of business valuation. Following are some of the examples:

Shareholder Disputes: Sometimes a breakup of the company is in the shareholder's best interests. This could also include transfers of shares from shareholders who are withdrawing.

Estate and Gift: A valuation would need to be done prior to estate planning or a gifting of interests or after the death of an owner.

Mergers, Acquisitions, and Sales: Valuation is necessary to negotiate a merger, acquisition, or sale, so the interested parties can obtain the best fair market price (as discussed above).

Buy-Sell Agreements: This typically involves a transfer of equity between partners or shareholders.

Financing: Generally, it is advisable to have a business appraisal before obtaining a loan, so the banks can validate their investment.

Purchase price allocation: This involves reporting the company's assets and liabilities to identify tangible and intangible assets.

VARIOUS EXPRESSION OF VALUE

Fair Market value

Arthur Anderson defines fair market value as:

It is the amount, price, highest price, most probable price, cash or-equivalent price at which property would change hands or the ownership might be justified by a prudent investor or at which a willing buyer and seller would exchange, would agree to exchange, have agreed to exchange, should agree to exchange or may reasonably be expected to exchange, possibly with equity to both and both fully aware or having knowledge or at least basic knowledge of the relevant facts, possibly even acting prudently and for self-interest and with neither being under compulsion, abnormal pressure, under duress nor any particular compulsion.

In other words, fair market value is price at which the property would change hands between a willing buyer and a willing seller, where both are not under any compulsion to buy and sell and they have reasonable knowledge of relevant facts and information. This means that any representative price would not work if it affects buyer's or seller's unique motivations. This would be an example of investment value, defined by real estate terminology as "value to a particular investor based on individual investment requirements." The International Glossary of Business Valuation Terms (IGBVT), defines fair market value as:

The 'highest price' in times of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arm's length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts.

Fair Value

Fair value is sometimes construed as fair market value without discount. The meaning of fair value may depend upon the context and the purpose of valuation. In business, the term 'value' applies to certain specific transactions, especially, in case of mergers, acquisitions, sell-offs, spin-offs, and issue of shares.

In most of the countries, fair value is a statutory phenomenon and applies to rebellious shareholders' valuation rights. In the event of corporate mergers, sell-offs, and the like, minority shareholders think that they are being forced to receive less than adequate consideration for their stocks. So, they have the have right to have their shares appropriately appraised and to receive fair value in cash. Sometimes, there can be a willing buyer but not a willing seller and the buyer may be more knowledgeable than the seller. In such cases, fair value can be said to be the amount that will compensate an owner, who is involuntarily deprived of property. Indeed, it is sometimes left to judicial interpretation.

Fair value is more appropriately applicable to minority shareholders, but by default, their interests are valued as pro rata share of a controlling interest valuation on a non-marketable basis. With respect to rebels' shares, fair value means the value of the shares immediately before effecting any corporate action against which they have objections, excluding any appreciation or depreciation in anticipation of the corporate action unless exclusion would be inequitable.

In short, there is no clarity in the expression of fair value; it calls for compromise to accept a value, unless grossly unacceptable. The concept is so subjective that it has not been defined in the International Glossary of Business Valuation Terms (IGBVT).

Book Value

Book value is the historical value, synonymous to shareholders' equity, net worth, and net book value. It is the difference between total assets and the total liabilities appearing in the balance sheet of a company on a particular date. In any balance sheet, assets are recorded at historical costs, while the net of accumulated depreciation and liabilities are recorded at the face value.

Accounting standards of various countries do not allow companies to incorporate the potential Home-grown intangible assets, and as a result they understate the true book value of a company. So it may not be an appropriate measure of business value, unless it is adjusted with valuation of intangible assets. Usually, the longer the assets or liabilities carried on the books, the greater the differences between book value and fair market value.

Example: Michael loves to buy new cars, and almost never drives the same car for more than two years. Currently, he has a 2014 sports car and wants to trade it in for a 2016 sports car. Michael paid \$60,000 for his 2014 sports car when he originally purchased it. Upon arriving at the car dealership, Michael finds out that his car is only worth \$40,000. This \$20,000 decline in value is referred to as **accumulated depreciation**. The **book value** of an item is equal to its cost minus accumulated depreciation.

Intrinsic Value

Intrinsic value is the fundamental value which is estimated for a security such as stocks, based on all facts and circumstances of the business or investment. Intrinsic value of a security is determined based on earning power and earning quality. The earning power of the investment is measured in terms of the underlying entity's capability to constantly increase the rate of return with plausible assumptions including internal resources, external economic data and benchmarks. Earning quality is assessed by factors like customer base, profitability, customer satisfaction, employee satisfaction, relative risk, competitiveness and steadiness of earnings forecast. Basically, intrinsic value is the present value of future earnings stream discounted at current market yield.

For example, if a call option's strike price is \$15 and the underlying stock's market price is \$25 a share, then the intrinsic value of the call option is the stock price less the strike price, or $\$25 - \15 , so \$10. Assume the option was purchased for \$12, so the extrinsic value is the purchase price of the strike less the intrinsic value, or $\$12 - \10 , so \$2. An option is usually never worth less than what an option holder can receive if the option is exercised.

Replacement Value

Replacement value is the current cost of acquiring a similar new property which is likely to produce the nearest equivalent utility to the property being valued. An estimate of replacement cost takes into account how an asset would be replaced with newer materials and current technology. Replacement value is not the same as reproduction value, which is the cost of a duplicate asset, based on current prices. Replacement value and reproduction cost are used in the valuation of tangible assets that do not produce income directly, such as furniture and fixture, office equipment, and so on.

Example : Big Trucks INC. is a company that provides car rental services. The company's fleet is mostly made up of big trucks for people in the construction business. The company has to replace one of his cars because it is too old and clients don't want to lease it anymore. The truck was initially bought at \$20,000, but the current market price of a similar truck is \$23,000.

In this situation, it would cost the company \$23,000 to purchase a similar asset to the one they current have in order to replace it. Thus, \$23,000 is the replacement value of the \$20,000 truck because this is how much it would cost to buy that same truck today

Liquidation Value

Liquidation value is the net amount that can be realised if the business is terminated and the assets are sold piece-meal. There are two types of liquidation value: orderly liquidation and forced liquidation. When assets are sold over a reasonable period of time to maximise the proceeds received it is called *orderly liquidation*.

Forced liquidation value arises when assets are sold as quickly as possible. Sometimes, some companies are worth more when dead than alive (like Michael Jackson!). So it is essential to know whether the going concern value is more than the liquidation value or vice versa. Sometimes, from the minority interest point of view, there are situations when the going concern value is less than the liquidation value. In such situations, however minority shareholders cannot force liquidation even if the controlling shareholders desire to continue the business as a going concern.

For instance, Liquidation is the difference between some value of tangible assets and liabilities. As an example, assume liabilities for company A are \$550,000. Also assume the book value of assets found on the balance sheet is \$1 million, the salvage value is \$50,000 and the estimated value of selling all assets at auction is \$750,000, or 75 cents on the dollar. The liquidation value is calculated by subtracting liabilities from the auction value, which is $\$750,000$ minus $\$550,000$, or $\$200,000$.

Going Concern Value

Going concern value is the value of a business that is expected to continue to the future. It takes into account various intangible assets of the organization. The intangible elements of going concern value result from successful continuation of business. Factors like trained workforce, brands, formulations, trademarks, recipes (in fast food and eating joints), operational systems, necessary licenses, and so on, generate value for intangible assets, for which substantial costs are incurred by the company. The going concern value is relevant in the decision of mergers and acquisitions. Sometimes, an 'in-place value' is said to be relevant to assets because they are in working condition and they help produce income. For example, a fully depreciated asset can fetch some value because it is in place, functioning satisfactorily and generating cash.

Example of Going-Concern Value

For example, suppose that the liquidation value of Widget Corp. is \$10 million. This sum represents the current value of inventory, buildings and other tangible assets that can be sold assuming that the company is completely liquidated. However, Widget Corp.'s going-concern value could very well be \$60 million, as the company's reputation of being the world's leading widget producer and its ownership of patents and associated rights for widget production mean that the company should have a large and steady stream of future cash flows

Equity Interest Value

Equity interest of an investor in a business can be considered as an investment. The purchase of an equity interest in a closely held company can be considered as a long-term investment and in a listed company; it can be viewed as short-term investment. The equity investors not only expect to receive the investment (amount invested or principal) back from the company, but also expect to receive a fair return on the investment in the form of dividend. In addition, in the case of listed companies, the investors have an exit route through the stock market. Therefore, capital appreciation is regarded as an important part of return. This can be expressed in terms of the equation.

Return on equity investment =

$$\frac{\text{Cash flow (dividend)} + (\text{closing market price} - \text{opening market price})}{\text{Opening market price}}$$

Such returns are commensurate with various kinds of risks involved. The investment in equity follows certain principles, which apply to valuing businesses in the context of buying or selling a business. In any buying / selling deal, it must be clearly understood that both the buyer and the seller have various choices, and they need not necessarily enter into the proposed purchase/ sale transaction. The valuation of equity interests in closely held businesses is often a very difficult task due to the absence of an active and free secondary market for such securities. Under the circumstances many small as well as closely held businesses are valued, based on the investment value principle.

Caselet of Equity Interest Value

Frank is an angel investor. He has worked hard to build and sell his first company. Since he has already achieved that, he now turns his focus on investing in other budding entrepreneurs. Frank loves to see businesses grow with the owners.

Frank is invested in multiple businesses. One, a green products manufacturer, has received \$1,000,000 from Frank. For this he received 40% ownership. Another, a Web 2.0 company, has received \$1,500,000 from Frank. In this business, Frank owns 25%. Yet another, a simple e-commerce store, has received only \$750,000 from

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Frank. Frank owns 15% of this business.

The total value of Frank's equity interest is \$3,250,000. Phrased in terms of a percentage, Frank's equity interest in all of the businesses is a combined 80%. Though Frank does not own a majority percentage of these businesses he has 80% ownership as a total of 3 businesses.

Frank knows that he, in the event of a disagreement, will not be able to argue control of any business that he does not have approximately 30% of ownership for. This is due to the fact that courts tend to rule in the favor of the majority owner. Unless they appear to have been neglecting the business, that is the case. Frank can accept this for 2 reasons. He trusts the majority shareholders and sees this as just a risk of doing business. If Frank could not accept this, he would be wise to only invest in a business with the end result of 30% or more of total shares of stock.

Insurable Value

Insurable value is the value of destructible portion of an asset that requires to be insured to indemnify the owner in the event of loss. This type of value has significant relevance, sometimes in M&A decisions as insurance reduces the risk of the property. Of course, post-acquisition review of insurance coverage of property can be done with little impact on the valuation.

For example, in case of a real estate property, the insurable interest will mostly be the market value of the property.

However the insurable value does not include the land on which the property stands.

Value-in-use and Value-in-exchange

Value-in-use or *value-in-exchange* is a condition under which certain assumptions are made in valuing assets. It is associated with assets that are already in productive use and can be described as the value of an asset, for a particular use or to a particular user, as part of a going concern. However, it is important to understand the concept since the value of acquired assets (especially furniture, fixtures, equipment, and premises) in M&A transactions is influenced significantly by their use in the post-acquisition period. When specific assets used by any going business are valued, it is generally assumed that those assets will remain in their most productive use. Value-in-exchange is opposite to value-in-use; it relates to the value of a property or an asset exchanged for itself, and separate from an operating entity. Typically, the value-in-exchange is less than the value-in-use of an asset in a going business enterprise.

Goodwill Value

Goodwill is a specific type of intangible asset that arises when a business as a whole has value greater than the value of its identified intangible assets. Goodwill is also the sum total of imponderable qualities of a company which attract the customers to a business and it makes the stakeholders of the company give continued patronage. From M&A perspective, the value of goodwill is calculated as the difference between the price paid for an acquired business and the fair market value of the assets acquired (both tangible and separately identified intangible) and the net of the liabilities. The concept of goodwill value has important applicability to banks for tax, financial reporting, and regulatory reasons.

Assume that Company ABC wants to acquire Company XYZ. ABC purchases all of the outstanding stock of XYZ for \$8,000,000. On the acquisition date, Company XYZ lists the following assets and liabilities:

Balance Sheet of Company XYZ	
	Book Value
Current Assets	\$2,000,000
Property, Plant & Equipment (PP&E)	\$5,000,000
Goodwill	\$1,000,000
Liabilities	\$4,000,000
Stockholder's Equity	\$4,000,000

An appraisal estimates the fair market value (FMV) of the PP&E at \$7 million. The book value of all the other assets and liabilities is equal to FMV.

The fair value of XYZ's assets and liabilities is $\$2,000,000 + \$7,000,000 - \$4,000,000 = \$5,000,000$. We leave out the goodwill listed on XYZ's balance sheet because it's not a real asset being purchased by ABC -- it's an accounting construct XYZ was required to list pursuant to a prior acquisition.

ABC paid \$8,000,000 for the stock, so on its next balance sheet, ABC will list an account called Goodwill that will have a value of \$3,000,000.

Salvage Value

Salvage value is the amount that can be realised upon sale or disposal of an asset after it is found no longer useful to the current owner and is to be taken out of service. This is not a *scrap value*, which is no more useful to any one for any purpose. Knowledge of salvage value in the target company is significant for any acquisition decision.

Please incorporate suitable numerical examples or caselets.

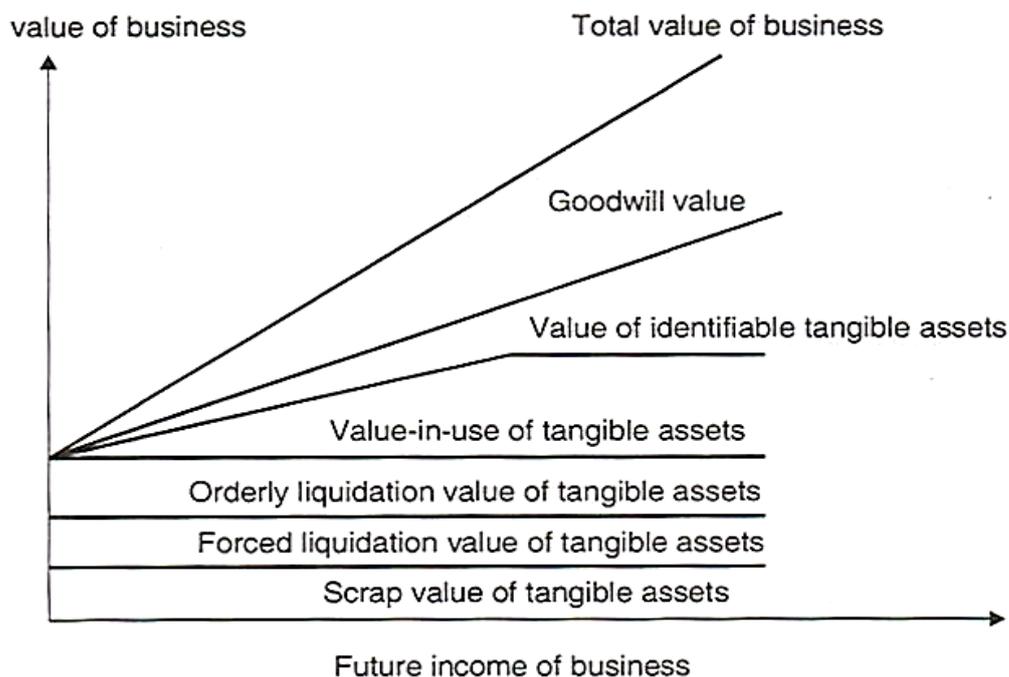
For example, let's assume Company XYZ purchases a piece of machinery for \$1 million, and that piece of machinery is expected to last for 10 years. After that, the machinery is estimated to be worth, say, \$10,000. Thus, Company XYZ would record a depreciation expense equal to \$990,000 over 10 years.

RELATIONSHIP AMONG DIFFERENT TYPES OF VALUE

The relationship among the various types of values discussed earlier is depicted in Figure 1.1 in the context of total business value or enterprise value. The diagram exhibits how different levels of future income of a business affect the various types of value.

The lowest expected value of a business is the scrap value of tangible assets, which is the same no matter what the income level is of the enterprise. The scrap value of equipment is constant, at a given point in time, irrespective of the earnings of the business that owns it. Forced liquidation value is the second lowest potential value, but from a practical point of view, this is perhaps the lowest value a business as a whole. Like scrap value, forced liquidation value remains the same, no matter what the income of the enterprise. Orderly liquidation value is conceptually identical to forced

Relationship among different types of value and future income.



liquidation, except that a higher value is usually received because more time is allowed to find a buyer. Value-in-use of the tangible assets typically increases with the income of the business up to the point at which the value-in-use equals the replacement value of the asset. At zero income, the value-in-use and orderly liquidation value are theoretically equivalent, but as the business becomes more successful, the importance of the tangible assets becomes more significant. Hence, value-in-use exceeds orderly liquidation value. The value of identifiable intangible assets also tends to increase as the income of the business increases. Along with the tangible assets and the income of the business, the importance of the identifiable intangibles also grows. Goodwill value will always increase with the earnings of the business because it is computed as the difference between the value of the total business and the value of the tangible and identified intangible assets. Consequently, as the earnings of the business grow, so does its total goodwill and enterprise value.

The cumulative result is therefore the total business value. This is the value of the tangible and intangible assets, and it increases along with the future income prospects of the business.

Purposes of Valuation and Impacts on the Value Estimates

The purposes of valuation are important because different methods of valuations produce different values. Before a valuation exercise is undertaken the valuer has to define the purpose of each valuation in clear terms. In fact, there is no single method of valuation that can be universally applied to all valuation purposes. Unless carefully done, a business valuation may fail to arrive at a conclusive valuation figure. The valuer may fail to match the valuation methodology with the purpose for which it is being done. The value conclusion can become useless if it is used for a purpose other than that intended for. Valuations, especially business valuations, are needed for different purposes and their purpose is to have an impact on the type of value derived and the methodologies adopted. There are primarily two types of reasons for business valuation: 'non-tax valuation' and 'tax valuation':

Non-tax valuations

- Mergers and acquisitions

- Divestitures/disinvestments
- Split-ups/spin-offs
- Liquidations
- Public issue of shares
- Buy and sale agreements
- Asset allocation under 'purchase method'
- Litigation support—partner/shareholder disputes
- Mortgaged loans
- Damage/economic loss law suits: Breach of contract, Lost business opportunity, Anti-trust, and so on.

Tax valuations

- Income tax
- Wealth tax
- Gift tax
- ESOPs (employees' stock options)
- Municipal valuation
- Charitable contributions

Valuation techniques for income tax purposes are substantially different from non-tax purposes. Non-tax purposes take into consideration, the requirements of prospective purchasers, liquidators, or merger partners, as distinguished from a determination of an acceptable value of the business as a stand-alone and going concern. The valuation appraisal is based on certain assumptions and perceptions of the valuer, seller and or the buyer. Very often, many essential factors are ignored on subjective considerations and the valuer gets involved in valuing a business in a non-commercial setting. Any good business valuation relies more on quantifiable, objective data, and attempts to remove subjectivity as much as possible. But, in practice, it is found that subjective and qualitative factors dominate the valuation exercise. It is difficult to split the roles of valuers in the event of their expert (non-advocate) and consultative (advocate) involvements in valuation responsibilities. Even though objective evaluation is desirable in business valuation, subjectivity somehow creeps into the valuation process.

PRICE AND VALUE DIFFERENTIATION

It is generally said that, price is what one pays and value is what he receives. There is also a theory which says that it (does not matter what price is paid for the business because it can always be sold at an equal or a greater price. Price is the valuable consideration for which a thing is bought and sold. Most of the time, price and value differ indicating differences in perceptions between the buyers and sellers. The fact that price obtained for an asset differs from its valuation does not necessarily indicate that the valuation was wrong. It may arise because the purchaser is unaware of the availability of the asset or the buyer believes that the price is lower than the worth of the asset. A reverse situation may also arise when the seller feels that the price he is charging is much above the worth of the asset. In essence, the difference between the price obtained and the valuation is the result of only the market imperfections and not necessarily indicate imperfections in the valuation process. The difference may arise because the valuer has adopted advisory approach rather than act as impartial appraiser of value. Owing to the complexities and interrelationships of value, purpose of valuation, methodologies used and information considered, rarely will two valuers value the same company at the same amount. The subjective

components involved in the valuation, even though mitigated by professional judgment and experience, can hardly be eliminated. It is, therefore suggested that, depending upon the purpose of valuation, quoting a range of values rather than a single value of a business or asset would be appropriate.

HINDERANCES / BOTTLENECKS IN VALUATION

Business valuations are an important aspect of transferring ownership of a closely-held business. Whether buying or selling a business, valuing assets during a divorce or gifting to the next generation, an accurate business valuation can save or make you money.

When selling or purchasing a privately-held company, sellers look to maximize their return at a value based on a rose-colored future. Buyers want to purchase at a discounted value based on the business's weaknesses. The right business valuator helps bridge the gap between buyers and sellers, provides a thorough understanding of the company's real value and structures the transition to take maximum advantage of the opportunity.

So when we are in the process of valuing a business, a detailed, comprehensive analysis and the ability to develop accurate projections and assumptions are necessities. Business valuation also requires the application of finance theory in the appropriate places and using professional judgment.

With that said, some of the most common hindrances facing business valuation professionals include:

- Developing reasonable assumptions for projections based on historical trends and expected future occurrences and documenting the reasoning behind those assumption choices.
- Requesting, tracking and reviewing the necessary documents.
- Spreading the tax returns and financial statements.
- Finding robust private company industry data against which to benchmark the subject entity.
- Gathering the appropriate market comparables (both public and private) and documenting the reasoning behind the market comparable choices.
- Calculating a discount rate that appropriately reflects the risk inherent in the subject entity and documenting the reasons for using (or not using) the methods used for calculating the WACC • Building a comprehensive valuation report.
- Building a comprehensive valuation report.
- Remaining compliant with SSVS No. 1 (especially for CPAs), USPAP, IRS guidelines and other industry standards.

For most professionals the real challenge comes in compiling a robust, fundamentally sound valuation report. The written report is often the only tangible product delivered to the client and typically serves as the cornerstone of professional credibility. Software like Sageworks Valuation Solution offers a streamlined business valuation workflow, but more importantly provides a unified system to create and compile valuation reports. Leveraging the right technology will greatly reduce the burden of comprehensive reporting, with a user friendly progression and fully integrated, intuitive report template builder.

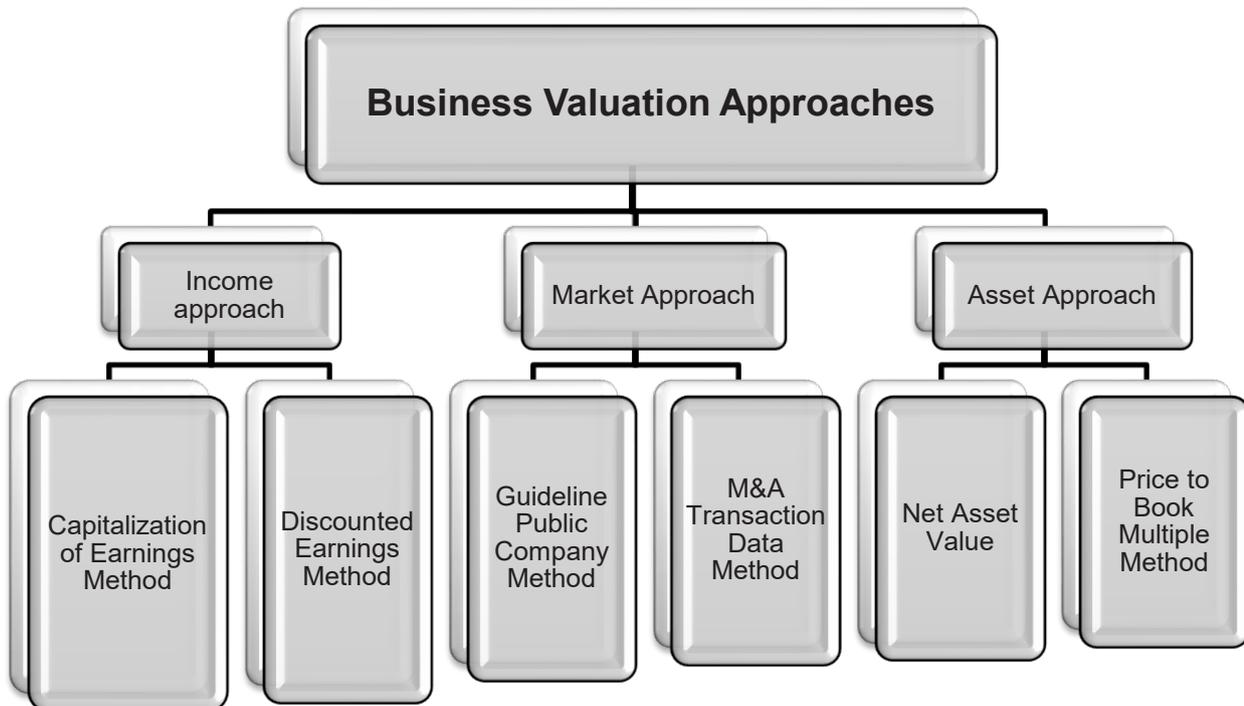
BUSINESS VALUATION APPROACHES

Accurate valuation requires appropriate application of the available approaches to determine value, a clear understanding of the exact investment in a business that is being sold or acquired, and a clear measure of the returns that the company generates.

Business vary in the nature of their operations, the markets they serve, and the assets they own. For this reason, the body of business valuation knowledge has established three primary approaches by which businesses may be appraised.

The three types of Business Valuation Approaches are:

1. Income approach
2. Market Approach
3. Asset Approach



1. Income Approach

The income business valuation approach is based on the idea of valuing the present value of future benefits. This approach estimates business value by considering the future income accruing over a period of time. The methods most commonly used by business valuation professionals include the Capitalization of Earnings Method and the Discounted Earnings Method (Discounted Cash Flow Method).

It will further be classified as follows:

a) Capitalization of Earnings Method

The capitalization method basically divides the business expected earnings by the so-called 'capitalization rate'. The idea is that the business value is defined by the business earnings and the capitalization rate is used to relate the two. This method is more appropriate when it appears that a company's current operations are indicative of its future operations, assuming of course, a normal growth rate. Under this method a stable level of earnings is divided by a capitalization rate in order to arrive at an operating value for the entity. Where net earnings are being capitalized, the capitalization rate is the net earnings discount rate less the average sustainable growth rate.

$$(i) \text{ Value} = \frac{\text{Net Operating Income}}{\text{Capitalization Rate}}$$

$$\text{Capitalization Rate} = \text{Discount Rate} - \text{Growth Rate}$$

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Example 1:

An investor wants to invest in an equity share of ABC Ltd. The company's last EPS was Rs. 50 per share and dividend payout ratio is 40%. The required rate of return from equity investment is 20%. Calculate the intrinsic value of equity if

- (i) There is no growth in dividend
- (ii) Dividend are expected to grow at a constant rate of 18% p.a.

Solution:

We are given that EPS = Rs. 5

Dividend = 40%

So, last dividend (D₀) = 40% of Rs. 5 = Rs. 20

(i) When there is no growth in dividend

So, D₀ = D₁ = Rs 20

$$P_0 = \frac{D_1}{K_e}$$
$$= \frac{20}{0.20}$$

= Rs. 100

Therefore, the intrinsic value is Rs. 100 when there is no growth in dividend.

(ii) When there is constant growth rate in dividend

g = 18%

therefore,

$$D_1 = D_0 (1 + g)$$
$$= 20 (1 + 0.18)$$
$$= 23.6$$

$$P_0 = D_1 / (K_e - g)$$
$$= 23.6 / .20 - 0.18$$
$$= Rs. 1180$$

Therefore, the intrinsic value is Rs. 1180, when there is constant growth of 18%.

Example 2.

Equity shares are currently selling at Rs. 60. The company is expected to pay a dividend of Rs. 3 with a growth rate of 8%. Find out the rate of return.

Solution:

P₀ = Rs. 60

g = 8%

D₁ = Rs.3

$$P_0 = D_1 / (K_e - g)$$

$$\begin{aligned} K_e &= D_1 / P_0 + g \\ &= 0.05 + .08 \\ &= 0.13 \text{ or } 13\% \end{aligned}$$

(ii) Cost of Debt

$$K_d = (\text{Int} \times (1-t))$$

Where , K_d = Cost of Debt

Int = Average Interest Rate

t = Marginal rate of tax

Example 3.

In Bhushan company, the value of 12% Debentures is Rs. 70,00,000 . Assume a tax rate is 50%. Compute the cost of debt.

$$\begin{aligned} \text{Solution: } K_d &= (\text{Int} \times (1-t)) \\ &= 12 (1-.5) = 6\% \end{aligned}$$

(b) Discounted Cash Flow Method (DCF)

DCF expresses the present value of the business as a function of its future cash earnings capacity. In this method, the appraiser estimates the cash flows of any business after all operating expenses, taxes, and necessary investments in working capital and capital expenditure is being met. Valuing equity using the free cash flow to stockholders requires estimating only free cash flow to equity holders, after debt holders have been paid off. This method is more appropriate when future returns are expected to be substantially different from current operations. This method usually has two stages, the first stage involves a discreet forecast of future earnings or cash flow to be discounted to the present using a discount rate and the second stage involves the construction and discounting of a terminal value. The terminal value is determined when the entity's future return stream is expected to achieve stable long-term growth.

It is a method of valuing a project, company, or asset using the concepts of the time value of money. All future cash flows are estimated and discounted by using cost of capital to give their present values (PVs). The sum of all future cash flows, both incoming and outgoing, is the net present value (NPV), which is taken as the value of the cash flows in question.

$$\text{PV of future sum} = FV/(1+r)^n$$

$$\text{OR} \quad = FV \times PVF(r,n)$$

PV of a series of Equal Future cash flows or Annuity

$$= \text{Annuity Amount} \times PVAF (r,n)$$

Example 4.

Assume that a deposit to be made at year zero into an account that will earn 8% compounded annually. It is desired to withdraw Rs. 5,000 three years from now and Rs. 7,000 six years from now. What is the size of the year zero deposit that will produce these future payments.

Solution:

$$PV = FV \times PVF(r,n)$$

$$= \text{Rs. } 5,000 \times PVF(8\%,3) + \text{Rs } 7,000 \times PVF(8\%,6)$$

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$$\begin{aligned} &= \text{Rs. } 5,000 \times (0.794) + \text{Rs. } 7,000 \times (0.630) \\ &= 3,970 + 4,410 = \text{Rs. } 8,380 \end{aligned}$$

2. Market Approach

Market Approach refers to the notion of arriving at the value of a company by comparing it to the market value of similar publicly listed companies. The market business valuation approach is also based on the principle of substitution. The business valuation expert identifies business entities that have transacted as a way to compare the subject business. Sold businesses in comparison to the subject is a way to calculate value of an equally desirable company from an ownership or investment standpoint. The methods most commonly used for the market business valuation approach are the Guideline Public Company Method, Guideline Company Transactions Method, Multiple of Discretionary Earnings Method, and Gross Revenue Multiple Method.

The comparison is based on certain financial ratios or multiples, such as the price to book value, price to earnings, EV/EBITDA, etc., of the equity in question to those of its peers. This type of approach, which is popular as a strategic tool in the financial industry, is mainly statistical, based on historical data, and current market sentiments. This is also known as relative valuation method. A market approach is a method of determining the appraisal value of an asset based on the selling price of similar items. The market approach is a business valuation method that can be used to calculate the value of property or as part of the valuation process for a closely held business. Additionally, the market approach can be used to determine the value of a business ownership interest, security or intangible asset.

a) Fair Market Value (FMV)

Fair Market Value (FMV) is, in its simplest expression, the price that a person reasonable interested in buying a given asset would pay to a person reasonably interested in selling it for the purchase of the asset or asset would fetch in the marketplace. To establish FMV, it must be assumed that prospective buyers and sellers are reasonably knowledgeable about the asset, that they are behaving in their own best interests, that they are free of undue pressure to trade and that a reasonable time period is given for completing the transaction.

Book value is the price paid for a particular investment or asset. Fair market value, on the other hand, is the current price at which that same asset can be sold. Book value and fair market value can work together to help investors determine how much they stand to gain or lose by selling off assets.

One way analysts try to identify the fair market value for a company is with a metric called the P/E (price to earnings) ratio. PE Ratio is one of the most widely used tools for stock selection. It is calculated by dividing the current market price of the stock by its earnings per share (EPS). It shows the sum of money you are ready to pay for each rupee worth of the earnings of the company.

$$\text{PE} = \text{Market price} / \text{EPS}.$$

Fair Value = Expected or Standard P/E x Expected EPS

Step 1

Calculate the P/E ratio.

Step 2

Compare the P/E ratio for your company with other companies in the same industry. For instance, if you want to find the fair value for a bank, you must compare the P/E ratio to other P/E ratios in the banking industry.

Step 3

Interpret the meaning of the P/E ratio. A high P/E ratio means the company is overvalued and a low P/E ratio means the company is undervalued. For instance, if I own a company with a P/E ratio of 5 when the average

P/E ratio for companies in the same industry is 3, I know that my stock is overvalued (expensive).

Step 4

Adjust the stock price down to the average P/E ratio for the industry. If the average P/E ratio is 3, and the P/E ratio on my stock is 5 (current price Rs.10 / earnings per share Rs. 2), then I can use the P/E equation to find what the stock price would need to be in order to have a P/E ratio of 3. The equation is: New P/E ratio x Earnings per share. The answer is 3 x Rs. 2 or Rs. 6. The fair market value for this stock is Rs. 6, not Rs. 10.

Example 5:

The expected EPS of a company for the current year is Rs. 8. In the industry the standard P/E ratio is 15 to 18. The company is in high growth stage. What is the best estimate of company's share price? Should the share be purchased?

Solution:

Since the company is in growth stage, we can assume that the appropriate P/E ratio is 18.

Therefore,

$$\text{Share price} = 18 \times 8 = \text{Rs. } 144$$

If the actual price is lower than Rs. 144, then the share should be purchased.

Example 6:

You are given the following information about a company

Recent EPS = Rs. 1.89

Growth rate (constant) = 6%

Dividend payout ratio = 50%

Required rate of return = 10%

After five years, the expected P/E ratio is 12.5. Calculate

- (i) The intrinsic value of share at present
- (ii) The expected selling price of share at the end of 5th year
- (iii) The maximum price at which the investor should buy this share

Solution:

$$(i) E_0 = 1.89$$

$$g = 6\%$$

$$K_e = 10\%$$

$$b = 0.50$$

$$P_0 = E_1 (1-b) / (K_e - g)$$

$$\begin{aligned} E_1 &= E_0 (1 + g) \\ &= 1.89(1 + 0.06) \\ &= 2.0034 \end{aligned}$$

$$\begin{aligned} P_0 &= 2.0034 (1 - 0.50) / (0.10 - 0.06) \\ &= \text{Rs. } 25.04 \end{aligned}$$

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herefore, the intrinsic value is Rs. 25.04

ii) The expected P/E ratio at the end of 5th year = 12.5

Expected selling price at the end of 5th year will be:

$$\begin{aligned} P_5 &= P/E \times EPS_6 \\ &= 12.5 \times 1.89 (1 + 0.06)^6 \\ &= 33.45 \end{aligned}$$

(iii) The maximum price an investor will be willing to pay would be the intrinsic value of this share i.e. Rs. 25.04

3. Asset Approach

The asset business valuation approach is based on the principle of substitution that a prudent buyer will not pay more for a property than the cost of acquiring a substitute property of equivalent utility. All assets and liabilities are adjusted to reflect the business as a going concern entity or the company in liquidation, depending on the premise of value appropriate for the valuation.

An asset-based approach is a type of business valuation that focuses on a company's net asset value (NAV), or the fair-market value of its total assets minus its total liabilities, to determine what it would cost to recreate the business. There is some room for interpretation in the asset approach in terms of deciding which of the company's assets and liabilities to include in the valuation, and how to measure the worth of each.

The asset-based approach is best used when a business is non operating or has been generating losses, and the company's focus is holding investments or real estate. The adjusted net asset method is commonly used for estimating the value of the business. The difference between the fair market value of the company's total assets and the fair market value of its total liabilities determines the fair market value of the business. This technique also includes the value of all of the business's intangible assets and liabilities, such as goodwill and pending litigation.

In this cost based approach, the primary emphasis is placed upon the fair market value of the assets and liabilities of a business. As a result, this approach uses various methods that consider the value of individual assets and liabilities including intangible assets. The most well-known method in this approach relies upon reported balance sheet assets and liabilities generally termed as book value. It should be recognized, however as per book value concept assets are reported in accordance with various accounting conventions that may or may not accurately reflect fair market value.

The Asset Based approach is further classified as:

(a) *Net Asset Value*

The total value of the assets of a company less its liabilities total value is the net asset value. For the purpose of valuation, the usual thing to do is to divide the net assets by number of shares to get the net assets per share.

This is the asset value which belongs to each share in the same way the price-earning ratio measures the profit per share. Net asset value is useful for shares valuation in sectors where the company value come from the held assets rather than the stream of profit that was generated by the company business. The examples are property companies and investment trusts. Both are convenient ways wherein the investors can buy diversified bundles of the assets they hold.

The assets' value can be obtained at book value or market prices and used depending on the circumstances and the sector. Some assets need to be excluded. One example of this is the tangible book value of NAV.

The value of Net Asset Value is arrived as follows:

Total assets (excluding miscellaneous expenditure & debit balance in P&L)	XX
Less: Total Liabilities	XX
NAV & debit	XX
OR	
Share Capital	XX
Add: Reserves	XX
Less: Miscellaneous expenses	XX
P& L (Dr balance)	XX
NAV	XX
value per share = $\frac{\text{NAV}}{\text{No. of Shares}}$	

Example 7

XYZ Co Ltd. is dealing automobile sector. Below listed is the Balance Sheet as on 31st March, 2018

Particulars	Amount (Rs.)
I EQUITIES AND LIABILITIES	
1. Shareholders' funds	
(a) Share Capital	
Authorised, Issued subscribed and paid up capital 15,00,000	22,50,000
14% Preference shares of Rs. 100 each	7,50,000
Equity shares of Rs. 10 each, fully called up and paid up	
(b) Reserve and surplus	
General reserve	9,00,000
2. Non-current liabilities	
15% Debentures	7,00,000
3. Current Liabilities	
Current liabilities	5,00,000
TOTAL	43,50,000
II ASSETS	
1. Non-current Assets	

(a) Fixed Assets	
Tangible Assets & intangible Assets	32,50,000
(b) Investment	6,00,000
2. Current Assets	
Misc Current Assets	5,00,000
TOTAL	43,50,000

Calculated under Net Assets method

- (a) Discharge 15% debentures at a premium of 10%
- (b) Fixed assets 10% above the book value.
- (c) Investments at par value.
- (d) Current assets at a discount of 10%.

Solution:

Net Asset Method:		(in '000's)
Value of assets :		
Fixed assets (3250000 + 10%)	35,75	
Investments		6,00
Current assets (500000 + 10%)	4,50	
Total assets		46,25
Less: Liabilities :		
15% debentures (700000 + 10%)		7,70
Current liabilities		<u>5,00</u>
		<u>33,55</u>

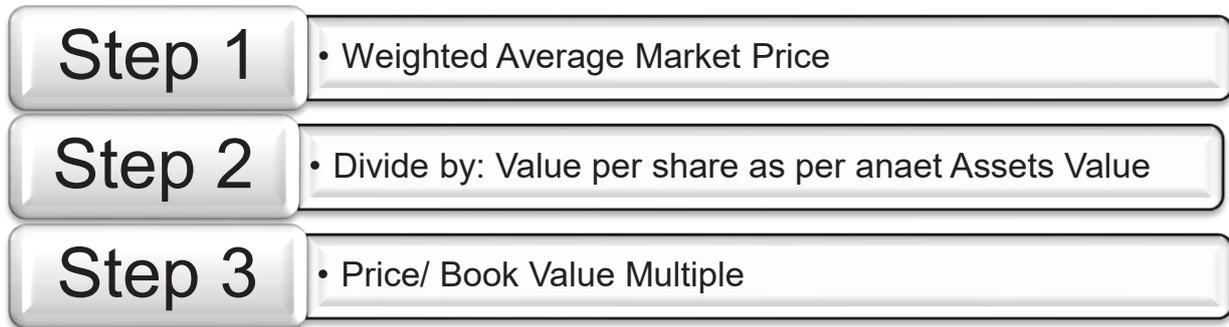
(b) Price to Book Multiple Method

The application of this method is similar to that of the P/E multiple method. Since the book value of equity is essentially the amount of equity capital invested in the firm, this method measures the market value of each dollar of equity invested.

This method can be used for

- companies in the manufacturing sector which have significant capital requirements.
- companies which are not in technical default (negative book value of equity)

The Price/Book Value Multiple of Comparable Company is arrived as follows



Example 8:

SRM Corporation, which markets cleaning chemicals, insecticides and other products, paid dividends of Rs.2.00 per share in 2017 on earnings of Rs.4.00 per share. The book value of equity per share was Rs.40.00, and earnings are expected to grow 6% a year in the long term. The stock has a beta of 0.85, and sells for Rs.60 per share. (The treasury bond rate is 7%.) .Based upon these inputs, estimate the price/ book value ratio for SRM.

Solution:

Dividend Payout Ratio = $2/4 = 50\%$

Return on Equity = $4/40 = 10\%$

Cost of Equity = $7\% + 0.85 * 5.5\% = 11.68\%$

Expected Growth Rate = 6%

Price/Book Value Ratio = $(.1) (.5)(1.06)/(.1168 - .06) = 0.93$

A simpler solution might be the following:

Price/Book Value Ratio = $(.10 - .06)/(.1168 - .06) = 0.70$

(This solution takes into account the relationship between ROE and g, i.e., $g=b(ROE)$)

Case Study

Corporate Valuation and Indian Politics: Privatization of BALCO

The sale of 51 per cent equity stake in Bharat Aluminium Company Ltd. (BALCO) for a consideration of Rs. 551.5 crore by the Government of India to Sterlite Industries, made hue and cry in the political circle over the 'lack of transparency' and 'questionable asset-valuation methodology'. Mr. Dipankar Mukherjee, Member of Parliament (Rajya Sabha) wrote to the minister in charge of the disinvestment, Mr. Arun Shourie, seeking re-valuation of BALCO, under the overall supervision of the Comptroller and Auditor General (CAG) of India. He also urged that the reserve price so determined, be placed in the Parliament to clear all doubts about distress sale. Mr. Mukherjee observed that the authorised valuer, Mr. P.V. Rao, spent just 10 days to finalise his report. He visited Korba unit of BALCO from 31 January to 4 February, 2001 and the Bidhanbag unit on 5 and 6 February, 2001. He alleged that it was difficult to understand how the valuation exercise had been completed within a span of 10 days. He expressed that even reputed consultants with a proven expertise aided by backup data would take much more time to undertake the study of a plant for assessing the 're-use' value after ascertaining the residual life of the plant and machinery. In the words of Mr. Mukherjee,

A minimum time is required for technical evaluation before assessing the sale value and that too by a multi-

disciplinary agency having proven track record in such an assignment. Under these circumstances, it is important to allay apprehensions about a tutored valuation with a predetermined objective of undervaluing the asset to suit some chosen bidder.

Gradually, opposition to this disinvestment (51 per cent of the equity) was gaining momentum, with the BALCO employees' union submitting a memorandum to the then Prime Minister of India, Mr. Atal Behari Vajpayee seeking his intervention. The employees alleged that proper evaluation of the company had not been done. They opined that in the valuation of BALCO, there was gross undervaluation in some of the assets such as:

	Rs.(Crore)
Kobra plant, Bidhanbag plant, land, quarters and buildings	800
New cold-rolling projects	184
Cash surplus	300
Thus, the total value of these assets alone should be	1284

They demanded that the Department of Disinvestment (DOD) should clarify the means and way of utilisation of the surplus cash. The employees' union expressed that the DOD had not fixed any reserve price for BALCO. Besides, it had noted, that, there were several lapses in the tendering process. It pointed out that as per the existing tendering procedure, bids must have been invited from a minimum six parties and the government tendering procedure indicates that there should be a minimum of three parties. Both had not been followed.

The opposition parties contended that privatisation of BALCO was made at a 'throw-away price'. On the other hand, the union government asserted that the bid received from Sterlite Industries Limited was far in excess of the figures (valuation) arrived at through the three different traditional methods used by BALCO for valuing business, like 'discounted cash flow', 'balance sheet valuation', and 'industry comparison'. Asset valuation was also done for the sake of completeness even though it was not relevant for a going concern like BALCO, the note said According to the government, the 'discounted cash flow' methodology is the most appropriate method to value BALCO. It is the primary valuation method relied upon by the strategic investor and it also incorporates basic assumptions about BALCO on a long-term basis and as a going concern because it takes into account the operational efficiency of the business, its key revenue and cost-drivers and long-term prospects and the competitive environment. The government highlighted that the book value of the company amounted to Rs. 704 crore and 51 per cent of the same was Rs. 359 crore, which was well below the winning bid of Sterlite. Sterlite's offered price was the highest compared to the other heavyweight bidders, the A.V. Birla group's HINDALCO and the US-based ALOCA. The government refuted the allegations that the valuer licensed for assessing land and buildings, assessed plant and machinery also. BALCO had appointed a team to evaluate the bids submitted by the four income-tax approved valuers recommended by Jardine Fleming, reputed investment banker. The evaluation committee went by the credentials of the valuers and, in accordance with the existing government guidelines, chose Mr. P.V. Rao and Mr. Sanjeev Agarwal as they had given the lowest quotation. The government said that Mr. Rao and Mr. Agarwal were registered/approved land and building and plant and machinery valuers respectively under the Income-Tax Rules. The valuation was completed in 21 days (not 10 days as claimed by opposition parties), because all the data were readily available with them. The government claimed that the time taken by them, as experienced valuers was justified in the circumstances.

Ques 1. Why Mr Arun Shourie requested for revaluation of BALCO?

Ques 2. Why Discounted Cash Flow methodology is the most appropriate method to value BALCO?

Ques 3. Discuss the traditional methods for valuing the business:

- a) Discounted Cash Flow
- b) Balance Sheet Valuation
- c) Industry Comparison

Ques 4. Why the primary valuation method relied upon by the strategic investor and it also incorporates basic assumptions about BALCO on a long-term basis and as a going concern.

PRINCIPLES OF VALUATION

The following basic principles and issue pertaining to business valuation needs to be considered:

1. The value of anything tends to be determined by the cost of acquiring an equally desirable substitute, and this is known as the *principle of substitution*.
2. The investment value of the business (present value) = Benefit x Risk. The amount of return (profit) that a business provides to its owner is based on the rate of return expected on the investment. A fundamental relationship exists between the rate of return from an investment and the amount of risk involved in the investment. The greater the risk involved, the greater the required rate of return. In other words, the greater the risk that an owner will lose a particular deal, the greater the 'odds' (ROI) that will be placed on that owner. There are various types of investments that carry different levels of risk and, therefore, different potential returns.
3. Many owners of businesses feel that their businesses have- no intangible assets value. Therefore, such businesses are sold and transferred at tangible asset values only. It follows that intangibles exist if a business has excess earnings, and values are determined by capitalizing the excess earnings.
4. The given fact gives rise to two key questions: (i) What are excess earnings? (ii) What is an appropriate capitalization rate? Excess earnings are the earnings of the company in excess of the average earnings of companies with similar activities and size. But it is difficult to define an appropriate capitalization rate. Today, valuation has become an important topic of interest. Various methods and factors are used in valuing closely held businesses. These methods are not alternatives to one another; but all or many of the methods may need to be considered. Many formulas are tied to 'earnings' rather than 'excess earnings'. Earnings are multiplied or capitalized by certain industry factors or 'public' company comparable factors. It is recognized that if 'comparable' factors are not available, then other methods can be used.
5. Valuations cannot be made on the basis of a prescribed formula. There is no means whereby mathematical weights and the various applicable factors in a particular valuation case can be assigned in deriving the fair market value. Thus, no useful purpose is served by taking an average of several factors (for example, book value, capitalized earnings and capitalized dividends) and basing the valuation on the result. Such a process excludes active consideration of other pertinent factors, and the end result cannot be supported by a realistic application of the significant facts in the case except by mere chance.
6. Sometimes, it may not be possible to make a separate appraisal of the tangible and intangible assets of the business. An enterprise has a value on an ongoing concern basis. Whatever intangible values are available, may be measured by the amount by which the appraised value of the tangible assets exceeds the net book value of such assets.

In addition to the fundamentals of business valuation, there are other sources of information which valuation professionals should read and/or add to their library in the valuation business assignments. In particular, the valuer should be familiar with the business related texts which may include books, research papers, articles, seminars, and interactions with notable valuation mentors or other business mentors. It is in fact a subject of continuous learning.

Sources of Information for Valuation

Valuers rely on certain principal information, while assessing value of enterprise, business, equity, asset and so on. The sources of information are generally common and the information that are considered or investigated shall be material. The nature of information available and the amount of investigation done should be cost-effective and will vary according to individual circumstances of each valuation. The important sources of valuation related information are the following:

1. Annual reports and audited accounts of the company or the business being valued
2. Management accounts of the same
3. Reports on future prospects, operational results, cash flows, acquisition and divestment strategies, internal documents related to business plan, board discussion papers, review documents after discussions with senior management
4. Relevant economic data, industry statistics
5. Stock market statistics
6. Publicly available information like press release, media reports
7. Industry journals, surveys, and the like.

SUMMARY

- ❖ Valuation is a process of appraisal or determination of the value of certain assets: tangible or intangible, securities, liabilities and a specific business as a going concern or any company listed or unlisted or other forms of organization, partnership or proprietorship.
- ❖ Business valuation requires a working knowledge of a variety of factors, and professional judgment and experience.
- ❖ Valuation may be considered a science but, to a large extent, valuation variables require inherent subjectivity.
- ❖ Enhanced credibility of the valuation process requires establishing various estimates of values with minimum most possible range between the highest and lowest values arrived at through various methods.
- ❖ Valuation is a vital subject which will be used in different areas like merger & acquisition, amalgamation, acquisition, dispute resolution etc.
- ❖ The subject of the valuation is of vital importance to the valuation process, the selection of inputs and approach and method.
- ❖ The main objectives of corporate valuation are to assist a purchaser or a seller in deciding the acceptable purchase consideration & assist an arbitrator in settling a dispute between parties
- ❖ Before a valuation exercise is undertaken the valuer has to define the purpose of each valuation in clear terms. There are primarily two types of reasons for business valuation: 'non-tax valuation' and 'tax valuation'.
- ❖ Fair market value is price at which the property would change hands between a willing buyer and a willing seller, where both are not under any compulsion to buy and sell and they have reasonable knowledge of relevant facts and information.
- ❖ Book value is the historical value, synonymous to shareholders' equity, net worth, and net book value.

- ❖ *Intrinsic value* is the fundamental value which is estimated for a security such as stocks, based on all facts and circumstances of the business or investment.
- ❖ *Replacement value* is the current cost of acquiring a similar new property which is likely to produce the nearest equivalent utility to the property being valued
- ❖ *Liquidation value* is the net amount that can be realised if the business is terminated and the assets are sold piece-meal.
- ❖ *Going concern value* is the value of a business that is expected to continue to the future. It takes into account various intangible assets of the organization
- ❖ *Insurable value* is the value of destructible portion of an asset that requires to be insured to indemnify the owner in the event of loss.
- ❖ *Value-in-use or value-in-exchange* is a condition under which certain assumptions are made in valuing assets. It is associated with assets that are already in productive use and can be described as the value of an asset, for a particular use or to a particular user, as part of a going concern.
- ❖ Developing reasonable assumptions for projections based on historical trends and expected future occurrences and documenting the reasoning behind those assumption choices is a bottleneck during valuation process.
- ❖ Accurate valuation requires appropriate application of the available approaches to determine value, a clear understanding of the exact investment in a business that is being sold or acquired, and a clear measure of the returns that the company generates.
- ❖ The three types of Business Valuation Approaches are Income approach, Market Approach & . Asset Approach
- ❖ The income business valuation approach is based on the idea of valuing the present value of future benefits.
- ❖ The capitalization method basically divides the business expected earnings by the so-called 'capitalization rate'.
- ❖ DCF expresses the present value of the business as a function of its future cash earnings capacity. In this method, the appraiser estimates the cash flows of any business after all operating expenses, taxes, and necessary investments in working capital and capital expenditure is being met.
- ❖ Market Approach refers to the notion of arriving at the value of a company by comparing it to the market value of similar publicly listed companies
- ❖ Fair Market Value (FMV) is, in its simplest expression, the price that a person reasonable interested in buying a given asset would pay to a person reasonably interested in selling it for the purchase of the asset or asset would fetch in the marketplace.
- ❖ The asset business valuation approach is based on the principle of substitution that a prudent buyer will not pay more for a property than the cost of acquiring a substitute property of equivalent utility.
- ❖ The value of anything tends to be determined by the cost of acquiring an equally desirable substitute, and this is known as the *principle of substitution*.
- ❖ The investment value of the business (present value) = Benefit x Risk. The amount of return (profit) that a business provides to its owner is based on the rate of return expected on the investment
- ❖ The important sources of valuation related information are the Annual reports and audited accounts of the company or the business being valued & Management accounts of the same

SELF TEST QUESTIONS

- Ques 1 Explain the relationship between different types of values?
- Ques 2 What is the purpose of Valuation and how it will impact the value estimates?
- Ques 3 Discuss the areas where Valuation can be used with examples?
- Ques 4 Explain the different approaches of Valuation? Give examples of each approach.
- Ques 5 Discuss the sources of information for estimating the Valuation of a firm with an example.
- Ques 6 ABC Co Ltd, deals in the production of automobile spare parts, paid dividends of Rs.3.00 per share in 2018 on earnings of Rs.6.00 per share. The book value of equity per share was Rs.50.00, and earnings are expected to grow 7% a year in the long term. The stock has a beta of 0.85, and sells for Rs.80 per share. (The treasury bond rate is 7%). Based upon these inputs, estimate the price/book value ratio for ABC.
- Ques 7 Satin Ltd has the following details
- ROE = 15%
- Expected EPS = Rs. 5
- Expected DPS = Rs. 2
- Required rate of return = 10% p.a
- As a financial advisor, you are required to calculate its expected growth rate, its price, P/E ratio.
- Ques 8 A firm is currently paying a dividend of Rs. 2 per share. The rate of dividend is expected to grow at 5% for first five years and 10% thereafter. Find the value of share if the required rate of return is 15%.
- Ques 9 Calculate cost of capital in each of the following cases
- (i) A 7 year Rs 100 bond of a firm can be sold for a net price of Rs 97.75 and is redeemable at a premium of 5%. The coupon rate of interest is 15% and tax rate is 55%.
 - (ii) A company issues 10% irredeemable preference shares of Rs 105 (FV = 100)
 - (iii) The current market value of a share is Rs 90 and the expected dividend at the end of current year is Rs 4.50 with a growth rate of 8%.
- Ques 10 The summary statement of financial position of ABC Co is as follows.

Non-current assets	\$	\$
Land and buildings		160,000
Plant and machinery		80,000
Motor vehicles		20,000
		260,000
Goodwill		20,000
Current assets		
Inventory	80,000	
Receivables	60,000	

Short-term investments	15,000	
Cash	5,000	160,000
Total assets		440,000
Equity and liabilities		
Equity		
Ordinary shares of \$1		80,000
Reserves		140,000
4.9% preference shares of \$1		50,000
		270,000
Non-current liabilities		
12% loan notes	60,000	
Deferred taxation	10,000	70,000
Current liabilities		
Payables	60,000	
Taxation	20,000	
Proposed ordinary dividend	20,000	100,000
		440,000

What is the value of an ordinary share using the net assets basis of valuation?

LIST OF FURTHER READINGS

1. Valuation: Measuring and Managing the Value of Companies by McKinsey & Company.
2. The Little Book of Valuation: How to Value a Company, Pick a Stock and Profit by Aswath Damodaran.
3. Study Material for Educational Course – Asset class: Securities or Financial Assets, Registered Valuers Organisation (A wholly owned subsidiary of ICSI and registered with IBBI)
4. Valuation by Registered Valuers under Companies Act, 2013 & Insolvency & Bankruptcy Code, 2016 by CA Kamal Garg, Published by Bharat Law House Pvt. Ltd.
5. Principles and Practice of Valuation by D.N.Banerjee, Published by ELH, Calcutta

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2. S.Jaykishan (2014).Overview of Business Valuations. Retrieved from www.sjaykishan.com/wp-content/uploads/2014/.../Overview-of-business-Valuation.pdf
3. Agarwal Niketa CA. **Overview of Business Valuations**. Retrieved from <https://www.justia.com/family/business-valuation/>

Lesson 2

Purpose of Valuation

LESSON OUTLINE

- Introduction
- Business Valuation Purposes
- Purpose of Valuation
- Mergers & Acquisition
- Sale of a Business
- Fund Raising
- Voluntary Assessment
- Taxation
- Finance
- Accounting
- Industry Perspective
- Statutory Dimensions
- Society Angle
- SUMMARY
- SELF TEST QUESTIONS

LEARNING OBJECTIVES

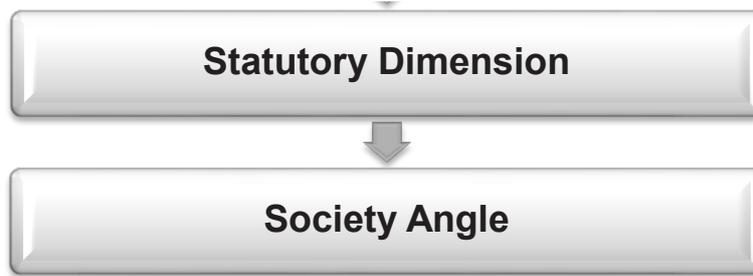
The main objective of this chapter is to make student aware about what is the main purpose of valuation in different dimensions, as business valuation can depend on the values of the assessor, tangible and intangible assets, goodwill and varying economic conditions. The learning objective of this chapter is to understand theoretically & practically the different purposes of valuation like:

- Mergers & Acquisition
- Sale of a Business
- Fund Raising
- Voluntary Assessment
- Taxation
- Finance
- Accounting
- Industry Perspective
- Statutory Dimensions
- Society Angle

ORIENTATION

This study lesson requires expert level knowledge as unless and until a person is conversant with the purpose of valuation, there is no point in advancing further. It is when a person is convinced that valuation is an integral part of today's business and it is a pervasive element, then only a student will enjoy reading the further lessons. Keeping this vital point in perspective, this study lesson have been designed to impart knowledge regarding application of valuation concepts in key business processes like, Merger & Acquisitions, Sale of Business, Fund Raising etc.

FAMILY TREE OF CONCEPTS



INTRODUCTION

Business Valuation is the process of determining economic value of a business or company. It assesses a variety of factors to determine the fair market value in a sale, but there is no one way to verify the worth of a company. Business valuation can depend on the values of the assessor, tangible and intangible assets, goodwill and varying economic conditions. Business valuation provides an expected price of sale; however, the real price of sale can vary.

It is to be noted that the topic of business valuation is frequently discussed in corporate finance. Business valuation is typically conducted when a company is looking to sell all or a portion of its operations or looking to merge with or acquire another company. The valuation of a business is the process of determining the current worth of a business, using objective measures, and evaluating all aspects of the business. A business valuation might include an analysis of the company's management, its capital structure, its future earnings prospects or the market value of its assets. The tools used for valuation can vary among valuers, businesses and industries. Common approaches to business valuation include review of financial statements, discounting cash flow models and similar company comparisons.

A business valuation requires a working knowledge of a variety of factors, and professional judgment and experience. This includes recognizing the purpose of the valuation, the value drivers impacting the subject company, and an understanding of industry, competitive and economic factors, as well as the selection and application of the appropriate valuation approach / (es) and method(s).

Some of the significant considerations for undertaking valuation are as under:

- i) What is the purpose of the valuation?
- ii) What basis of value should apply?
- iii) What premise of value should be used?
- iv) What is the subject of the valuation?
- v) How has the business performed historically?
- vi) What is the future outlook for the business?
- vii) Which valuation approaches should be utilized?
- viii) How do you arrive at a conclusion of value?

BUSINESS VALUATION PURPOSES

The primary purpose of business valuation is preparing a company for sale, there are many purposes. The following are a few examples:

Shareholder Disputes: Sometimes a breakup of the company is in the shareholder’s best interests. This could also include transfers of shares from shareholders who are withdrawing.

Estate and Gift: A valuation would need to be done prior to estate planning or a gifting of interests or after the death of an owner. This is also required by the IRS for Charitable donations.

Divorce: When a divorce occurs, a division of assets and business interests is needed.

Mergers, Acquisitions, and Sales: Valuation is necessary to negotiate a merger, acquisition, or sale, so the interested parties can obtain the best fair market price.

Buy-Sell Agreements: This typically involves a transfer of equity between partners or shareholders.

Financing: Have a business appraisal before obtaining a loan, so the banks can validate their investment.

Purchase price allocation: This involves reporting the company’s assets and liabilities to identify tangible and intangible assets.



MERGERS & ACQUISITION

Mergers and acquisitions (M&A) are defined as consolidation of companies. Differentiating the two terms, **Mergers** is the combination of two companies to form one, while **Acquisitions** is one company taken over by the other. M&A is one of the major aspects of corporate finance. The reasoning behind M&A generally given is that two separate companies together create more synergy than being existing separately. With the objective of wealth maximization, companies keep evaluating different opportunities through the route of merger or acquisition.

Mergers & Acquisitions can take place:

- by purchasing assets

- by purchasing common shares
- by exchange of shares for assets
- by exchanging shares for shares

Reasons for Mergers and Acquisitions:

- Financial synergy for lower cost of capital
- Improving company's performance and accelerate growth
- Economies of scale
- Diversification for higher growth products or markets
- To increase market share and positioning giving broader market access
- Strategic realignment and technological change
- Tax considerations
- Undervalued target
- Diversification of risk

Three important considerations for merger and acquisition should be taken into account:

- The company must be willing to take the risk and vigilantly make investments to benefit fully from the merger as the competitors and the industry take heed quickly
- To reduce and diversify risk, multiple bets must be made, in order to narrow down to the one that will prove fruitful
- The management of the acquiring firm must learn to be resilient, patient and be able to adapt to the change owing to ever-changing business dynamics in the industry

Stages involved in any M&A:

Phase 1: Pre-acquisition Review: This would include self assessment of the acquiring company with regards to the need for M&A, ascertain the valuation (undervalued is the key) and chalk out the growth plan through the target.

Phase 2: Search and Screen Targets: This would include searching for the possible apt takeover candidates. This process is mainly to scan for a good strategic fit for the acquiring company.

Phase 3: Investigate and valuation of the Target: Once the appropriate company is shortlisted through primary screening, detailed analysis of the target company has to be done. This is also referred to as due diligence.

Phase 4: Acquire the target through Negotiations: Once the target company is selected, the next step is to start negotiations to come to consensus for a negotiated merger or a bear hug. This brings both the companies to agree mutually to the deal for the long term working of the M&A.

Phase 5: Post Merger Integration: If all the above steps fall in place, there is a formal announcement of the agreement of merger by both the participating companies.

Reasons for the failure of M&A – Analyzed during the stages of M&A:

Poor Strategic Fit: Wide difference in objectives and strategies of the company

Poorly Managed Integration: Integration is often poorly managed without planning and design. This leads to failure of implementation

Incomplete Due Diligence: Inadequate due diligence can lead to failure of M&A as it is the crux of the entire strategy

Overly optimistic: Too optimistic projections about the target company leads to bad decisions and failure of the M&A

Example: Breakdown in merger discussions between IBM and Sun Microsystems happened due to disagreement over price and other terms.

Please provide a brief about the IBM and Sun Microsystems merger process and reasons for its failure in order to make it complete.

IBM's talks to acquire smaller computer and software rival Sun Microsystems Inc broke down after Sun rejected IBM's \$7 billion offer. The collapse of negotiations, if final, is likely to hurt Sun's shares as a buyout was seen as a means of survival for the once-storied Silicon Valley Company, which has been losing market share. A deal would also have helped IBM compete more effectively against rivals such as Hewlett-Packard Co.

Sun was unhappy with International Business Machines Corp's offer of \$9.40 per share or below. The bid represented a premium of up to 89 percent on Sun's shares before deal talks were first reported.

IBM was in exclusive talks to buy Sun and had proceeded to the due diligence stage. IBM lowered its offer price for Sun to \$9.50 a share from \$9.55 a share. Sun shares had risen to \$8.49 , from \$4.97.

The collapsed talks are expected to damage the smaller Sun more than IBM, the world's largest technology services provider, which has fared relatively well despite the global economic slump thanks to its outsourcing business and its shift from hardware to higher-margin software sales.

The company rose to prominence selling high-end computer servers in the 1990s but never fully recovered from the dotcom bubble burst earlier this decade. Analysts also say it has failed to fully capitalize on its software assets including Solaris and Java.

Failed negotiations with IBM could mean that Sun will need to look for another buyer, and contend with a lower offer. But no bidder other than IBM has emerged in the months that Sun has been shopping itself.

Recent Mergers and Acquisitions

Acquirer	Target Company	Deal Size	Comments
Flipkart	Myntra	USD300mn	Acquisition led to scripting of largest ecommerce stories
Asian Paints	Ess Ess Bathroom products	undisclosed	to be one stop provider in home decor space
RIL	Network 18 Media & Investments	Rs. 4000cr	78% percent shares were taken over by RIL
Merck	Sigma	USD17bn	Acquisition to boost lab supply business of Merck
Sun Pharma	Ranbaxy	USD4bn	Increase presence in global and domestic markets
TCS	CMC		Merger to consolidate IT business

Tata Power	PT Arutmin Indonesia	Rs. 47.4bn	Purchased 30% stake
Groupe Lactalis	Tirumala Milk	USD275mn	Lactalis entry into India
CSP CX	Aditya Birla Minacs	USD260mn	Aditya Birla's exit from IT industry
Thomas Cook	Sterling India	Rs 870cr	Entry into hospitality business
Yahoo	Bookpad	USD15mn	First acquisition made by Yahoo
Kotak Bank	ING Vysya	USD2.4bn	All share deal
Ola cabs	Taxi for sure	USD200mn	Acquisition of competition

Source: <https://www.nasdaq.com/article/15-of-the-best-mergers-acquisitions-of-2017-cm898464>

PURPOSE OF VALUATION IN MERGER & ACQUISITION

Business combinations which may take shapes of mergers, acquisitions, amalgamation and takeovers are critical facets of corporate structural changes. They have played a crucial role in the external growth of a number of leading companies across the globe (Pandey, 1999). There has been an increasing wave of merger and acquisition activities since 2000. Further, it is to be noted that majority of merger and acquisitions have happened in the following sectors across the globe- Oil and Gas; Textile; Insurance; Banking etc.

Valuation during merger and acquisition is important as it is observed that at times, the merger and acquisition is given a go ahead without enquiring whether there is any potential benefit out of the merger or acquisition.

In a merger or acquisition transaction, valuation is essentially the price that one party will pay for the other, or the value that one side will give up to make the transaction work. Valuations can be made via appraisals or the price of the firm's stock if it is a public company, but at the end of the day valuation is often a negotiated number.

Valuation is often a combination of cash flow and the time value of money. A business's worth is in part a function of the profits and cash flow it can generate. As with many financial transactions, the time value of money is also a factor. How much is the buyer willing to pay and at what rate of interest should they discount the other firm's future cash flows?

Both sides in an M&A deal will have different ideas about the worth of a target company: its seller will tend to value the company at as high of a price as possible, while the buyer will try to get the lowest price that he can.

There are, however, many legitimate ways to value companies. The most common method is to look at comparable companies in an industry, but deal makers employ a variety of other methods and tools when assessing a target company. Here are just a few of them:

1. Discounted Cash Flow (DCF) - A key valuation tool in M&A, discounted cash flow analysis determines a company's current value according to its estimated future cash flows. Forecasted free cash flows (net income + depreciation/amortization - capital expenditures - change in working capital) are discounted to a present value using the company's weighted average costs of capital (WACC). Admittedly, DCF is tricky to get right, but few tools can rival this valuation method.

Please incorporate some easy examples of the DCF method for quick understanding of the students.

Example: Assume that a deposit to be made at year zero into an account that will earn 8% compounded annually. It is desired to withdraw Rs. 5,000 three years from now and Rs. 7,000 six years from now. What is the size of the year zero deposit that will produce these future payments.

Solution:

$$PV = FV \times PVF(r,n)$$

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$$\begin{aligned} &= \text{Rs. } 5,000 \times \text{PVF}(8\%,3) + \text{Rs } 7,000 \times \text{PVF}(8\%,6) \\ &= \text{Rs. } 5,000 \times (0.794) + \text{Rs. } 7,000 \times (0.630) \\ &= 3,970 + 4,410 = \text{Rs. } 8,380 \end{aligned}$$

Example: Tom is the CFO of a mid-sized company in Atlanta. Company leadership is trying to determine whether or not to invest in a new piece of machinery to make their manufacturing process more efficient. This machine would cost the organization \$1,000,000 and its life is 5 years. What is the net present value of this investment using the discounted cash flows method?

Solution: The CFO determined the discount rate to be 10%. With this information, he calculated the following future cash flows:

- Year 1 = \$130,000
- Year 2 = \$150,000
- Year 3 = \$200,000
- Year 4 = \$210,000
- Year 5 = \$200,000

The total of these cash flows is \$890,000. The net present value of this investment is \$890,000-\$1,000,000 which is equal to -\$110,000. The company should not make this investment because the cost is greater than the value of the future income creating a negative return over the time period.

2. Comparative Ratios - The following are two examples of the many comparative metrics on which acquiring companies may base their offers:

- **Price-Earnings Ratio (P/E Ratio)** - With the use of this ratio, an acquiring company makes an offer that is a multiple of the earnings of the target company. Looking at the P/E for all the stocks within the same industry group will give the acquiring company good guidance for what the target's P/E multiple should be.

Price-to-Earnings Ratio (P/E) = Market value per share / Earnings Per Share (EPS)

Example: A company XYZ that currently trades at \$100.00 and has an earnings per share (EPS) of \$5. Calculate what will be XYZ's price-to-earnings ratio?

Price-to-Earnings Ratio (P/E) = Market value per share / Earnings Per Share (EPS)

Price-to-Earnings Ratio (P/E) = $100 / 5 = 20$.

- **Enterprise-Value-to-Sales Ratio (EV/Sales)** - With this ratio, the acquiring company makes an offer as a multiple of the revenues, again, while being aware of the price-to-sales ratio of other companies in the industry.

The calculation of EV-to-sales is simply the enterprise value of the company divided by its sales. The enterprise value of a company is calculated using the following simplified formula:

$$\text{EV/Sales} = \frac{\text{Market Capitalization} + \text{Debt} + \text{Preferred Shares} - \text{Cash and Cash Equivalents}}{\text{Annual Sales}}$$

As an example, assume a company reports sales for the year of \$70 million. The company has \$10 million of short-term liabilities on the books and \$25 million of long-term liabilities. It has \$90 million worth of assets, of which 20% is cash. Lastly, the company has 5 million shares of common stock outstanding and the current price of the stock is \$25 per share. Using this scenario, the company's enterprise value is:

$$EV = (5,000,000 \times \$25) + (\$10,000,000 + \$25,000,000) - (\$90,000,000 \times 0.2) = \$125,000,000 + \$35,000,000 - \$18,000,000 = \$142,000,000$$

Next, to find the EV-to-sales, simply take the EV and divided by sales. In this example, the EV-to-sales is:

$$EV\text{-to-sales} = \$142,000,000 / \$70,000,000 = 2.03$$

3. Replacement Cost - In few cases, acquisitions are based on the cost of replacing the target company. For the sake of simplicity, suppose the value of a company is simply the sum of all its equipment and staffing costs. The acquiring company can literally order the target to sell at that price, or it will create a competitor for the same cost. Naturally, it takes a long time to assemble good management, acquire property and get the right equipment. But this method of establishing a price certainly wouldn't make much sense in a service industry where the key assets - people and ideas - are hard to value and develop.

CALCULATION OF REPLACEMENT COST VALUE/ NET SUBSTANTIAL VALUE

Liabilities	\$ (Mn)	Assets	\$ (Mn)
Equity Share Capital	1500	Fixed Assets	3600
Preference Share Capital	600	Inventories	1350
Reserves and Surplus	300	Cash and Bank Balance	150
Adjustment	600	Debtors	300
Long-term Debt	900		
Short-term Debt	300		
Creditors	1200		
Total	5400	Total	5400

Calculate the Replacement Cost Value.	
Replacement Cost Value Calculation	\$ Mn
Total Assets (now higher)	5400
Less Long-Term Debt	900
Less Short Term Debt	300
Less Creditors	1200
Replacement Cost Value or Net Substantial Value	3000

Hence, as per replacement value method, the value of the company is \$3000 Mn

Some factors to be considered in any analysis are as under:

- Future prospects of the business, i.e. whether the target company has robust growth prospects or at least generates good amount of profits and cash flow?
- The risk of the other company, i.e. whether the target company is operating in an industry that may create huge risk for the combined entity?
- The cost of capital in terms of replacement cost value transaction provides the best return on the acquiring party's capital.

Mergers are awfully hard to get right, so investors should look for acquiring companies with a healthy grasp of reality.

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A corporate merger or acquisition can have a profound effect on a company's growth prospects and long-term outlook. But while an acquisition can transform the acquiring company literally overnight, there is a significant degree of risk involved, as mergers & acquisition (M&A) transactions overall are estimated to only have a 50% chance of success.

M&A activity has longer-term ramifications for the acquiring company or the dominant entity in a merger than it does for the target company in an acquisition or the firm that is subsumed in a merger. For a target company, an M&A transaction gives its shareholders the opportunity to cash out at a significant premium, especially if the transaction is an all-cash deal. If the acquirer pays partly in cash and partly in its own stock, the target company's shareholders get a stake in the acquirer, and thus have a vested interest in its long-term success.

For the acquirer, the impact of an M&A transaction depends on the deal size relative to the company's size. The larger the potential target, the bigger the risk to the acquirer. A company may be able to withstand the failure of a small-sized acquisition, but the failure of a huge purchase may severely jeopardize its long-term success.

Once an M&A transaction has closed, the acquirer's capital structure will change, depending on how the M&A deal was designed. An all-cash deal will substantially deplete the acquirer's cash holdings. But as many companies seldom have the cash hoard available to make full payment for a target firm outright, all-cash deals are often financed through debt. While this increases a company's indebtedness, the higher debt load may be justified by the additional cash flows contributed by the target firm.

Market reaction to news of an M&A transaction may be favorable or unfavorable, depending on the perception of market participants about the merits of the deal. In most cases, the target company's shares will rise to a level close to that of the acquirer's offer, assuming of course that the offer represents a significant premium to the target's previous stock price. In fact, the target's shares may trade above the offer price if the perception is either that the acquirer has low-balled the offer for the target and may be forced to raise it, or that the target company is coveted enough to attract a rival bid.

There are situations in which the target company may trade below the announced offer price. This generally occurs when part of the purchase consideration is to be made in the acquirer's shares and the stock plummets when the deal is announced. For example, assume the purchase price of \$25 per share of Targeted XYZ Co. consists of two shares of an acquirer valued at \$10 each and \$5 in cash. But if the acquirer's shares are now only worth \$8, Targeted XYZ Co. would most likely be trading at \$21 rather than \$25.

Case Study 1: Sun Pharmaceuticals acquires Ranbaxy:

The deal has been completed: The companies have got the approval of merger from different authorities.

This is a classic example of a share swap deal. As per the deal, Ranbaxy shareholders will get four shares of Sun Pharma for every five shares held by them, leading to 16.4% dilution in the equity capital of Sun Pharma (total equity value is USD3.2bn and the deal size is USD4bn (valuing Ranbaxy at 2.2 times last 12 months sales).

Reason for the acquisition: This is a good acquisition for Sun Pharma as it will help the company to fill in its therapeutic gaps in the US, get better access to emerging markets and also strengthen its presence in the domestic market. Sun Pharma will also become the number one generic company in the dermatology space. (currently in the third position in US) through this merger.

Objectives of the M&A:

- Sun Pharma enters into newer markets by filling in the gaps in the offerings of the company, through the acquired company
- Boosting of products offering of Sun Pharma creating more visibility and market share in the industry
- Turnaround of a distressed business from the perspective of Ranbaxy

This acquisition although will take time to consolidate, it should in due course start showing results through overall growth depicted in Sun Pharma's top-line and bottom-line reporting.

Ques Why the valuation plays an important role when Sun Pharmaceuticals acquires Ranbaxy

Case Study 2: CMC merges with TCS:

This is an example where there is a merger in the same industry (horizontal). It was done to consolidate the IT businesses. The objective of this merger, as indicated by the management of CMC, was that the amalgamation will enable TCS to consolidate CMC's operations into a single company with rationalized structure, enhanced reach, greater financial strength and flexibility. Further it also indicated that, it will aid in achieving economies of scale, more focused operational efforts, standardization and simplification of business processes and productivity improvements.

Question: Why CMC merges with TCS? Give valid reasons.

SALE OF A BUSINESS

The sale of a business usually is not a sale of one asset. Instead, all the assets of the business are sold. Generally, when this occurs, each asset is treated as being sold separately for determining the treatment of gain or loss. A business usually has many assets.

A business usually has many assets. When sold, these assets must be classified as capital assets, depreciable property used in the business, real property used in the business, or property held for sale to customers, such as inventory or stock in trade. The gain or loss on each asset is figured separately. The sale of capital assets results in capital gain or loss.

Reasons for Sale of Business:

1) Partnership interests

An interest in a partnership or joint venture is treated as a capital asset when sold. The part of any gain or loss from unrealized receivables or inventory items will be treated as ordinary gain or loss.

2) Corporation interests

Your interest in a corporation is represented by stock certificates. When you sell these certificates, you usually realize capital gain or loss.

3) Corporate liquidations

Corporate liquidations of property generally are treated as a sale or exchange. Gain or loss generally is recognized by the corporation on a liquidating sale of its assets. Gain or loss generally is recognized also on a liquidating distribution of assets as if the corporation sold the assets to the distribute at fair market value.

In certain cases in which the distribute is a corporation in control of the distributing corporation, the distribution may not be taxable.

4) Allocation of consideration paid for a business

The sale of a trade or business for a lump sum is considered a sale of each individual asset rather than of a single asset. Except for assets exchanged under any nontaxable exchange rules, both the buyer and seller of a business must use the residual method to allocate the consideration to each business asset transferred. This method determines gain or loss from the transfer of each asset and how much of the consideration is for goodwill and certain other intangible property. It also determines the buyer's basis in the business assets.

5) Consideration

The buyer's consideration is the cost of the assets acquired. The seller's consideration is the amount realized (money plus the fair market value of property received) from the sale of assets.

PURPOSE OF VALUATION IN SALE OF BUSINESS

It is very important to value your business before selling it because it will help you to decide the proper selling price of your business.

Some suggested steps for doing valuation of a business.

1. Prepare your business information

Need a range of business information to value your business properly. If you need help with preparing your documents and can't afford a professional, consider asking friends or family with bookkeeping or business experience.

The following are the types of information needed before valuing a business:

A) Finances and assets

- Your financial statements (for the last 5 years if possible) – such as cash flow statements, debts, annual turnover, and profit and loss statements
- Details of physical assets such as machinery, buildings, equipment, and stock
- Details of other assets such as goodwill towards the business and intellectual property (any designs or ideas that you have protected through copyright)

B) Legal information

- Legal documents such as leases and insurance policies
- Registration papers such as business name certificates, Australian Business Number (ABN) registration papers, licenses, permits, and any other papers that demonstrate you comply with government requirements

C) Business profile, procedures and plans

- Market conditions such as details of competitors, and how your business compares to them
- Sales information such as reports and forecasts
- Business history such as start date, ownership changes, and location changes
- Business procedure documentation such as marketing, staff roster and customer service procedures
- Business plan such as marketing, emergency management and growth plans
- Other details such as opening hours and whether the business premises are owned or leased

D) Staff, supplier and customer information

- Employee details such as job descriptions, skills and experience, work history, performance reviews, and pay rates
- Supplier details such as supply agreements and supply prices
- Customer details such as customer numbers, customer profiles and direct marketing activities

2. Decide whether to get professional Advice

In some cases professional advice on how to value your business through your accountant, a business advisor or a business broker becomes very beneficial.

These professionals can help you analyze your finances, find trends within your industry's market, and help you work out a value for your business. They can also help you calculate the goodwill value of your business and estimate your business' future profit.

An advantage of using a professional is that they may have clients who would be interested in buying your business, saving you the cost and hassle of advertising.

3. Choose a Valuation Method

There are many valuation methods for calculating the value of a business. There is no one set method for arriving at the desired sale value. The combination of the methods can be used for this purpose.

If you engage a professional, they can help you decide which method is best for your business and explain any industry specific methods relevant to your business.

Below listed are some of the important methods used for valuing the business:

A. Look at current market place value and your industry

How you value your business can depend heavily on the industry you're in, and the current marketplace value of similar businesses within that industry.

Industries usually come up with their own rules and formulas to value a business, so it's a good idea to conduct research to gain a good understanding of your industry before you sell your business.

The **Australian Bureau of Statistics** website contains a range of statistical data grouped by industry.

B. Use the return on investment method to calculate value

The return on investment (ROI) method uses your business' net profit to work out the value of your business.

ROI = (net annual profit/ selling price) x 100

For example, you have a selling price of \$200 000 in mind, but want to test your ROI based on that price. You calculate that your business' net profit was \$50 000 for the past year.

To work out the ROI, you use the formula:

$$\text{ROI} = (50\,000/200\,000) \times 100$$

In this case, your ROI is 25%.

If you have an ROI in mind, you can use it to calculate the price for your business:

Selling price = (Net Annual Profit / ROI) x 100

For example, if you were looking for a ROI of at least 50% for the sale of your business, and your business' net profit for the past year was \$100,000, one can work out the minimum selling price.

$$\text{Selling price} = (100\,000/50) \times 100$$

In this case, to achieve a ROI of at least 50%, you'll need to sell your business for at least \$200 000.

C. Use your business' assets to calculate value

When calculating your business' asset value, it's important to include both tangible and intangible assets of your business. Tangible assets are physical things you can touch such as tools, equipment, and property. Intangible assets are things that can't be touched but are still valuable such as intellectual property, brands and business goodwill.

After you've calculated the total asset value of your business, you can then use this value as an indication for how much you would like to sell your business for.

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As assessing your business' assets value can be a complicated process, it's a good idea to talk to your business advisor or accountant for help.

What is business goodwill?

Business goodwill is an asset that is much harder to value, as it does not have a determined market price. Goodwill can include:

- customer loyalty and relations
- brand recognition
- staff performance
- customer lists
- reputation of your business
- business operation procedures.

Calculating goodwill can be a complicated process, and different methods will give different results. Using different methods of calculation can give you an indication of the price range you would like to set for your business goodwill, and ultimately the value is what the marketplace or buyer is willing to pay.

Because it's difficult to calculate goodwill, it's a good idea consult a professional such as your accountant.

Take depreciation into account

If you use your business assets to calculate value, remember to take depreciation into account. Depreciation is the loss of value for your assets over time. For example, you may have purchased a computer for your business three years ago for \$1000. When calculating your business' asset value, the value of the computer will no longer be \$1000 as it was when you purchased it.

Talk to your accountant if you're unsure about how to work out depreciation of your business assets.

D. Find out the cost of creating your business from scratch

The cost of creating your business from scratch can be used as a benchmark for valuing your business. This is the estimated cost to build a similar business in your industry from scratch within the current market. To calculate the cost, you'll need to include all costs related to starting from scratch, including the costs of:

- buying stock
- buying equipment and tools
- getting licenses and permits
- recruiting, training and employing staff
- developing products
- marketing and promotion
- buying or leasing premises
- setting up an online presence etc.

E. Estimate the future profit of your business

For a buyer, the biggest value of your business will come from future profits generated. As a seller, you're more likely to sell at a higher price if you can show through your financial statements that your business is likely to be profitable in the future.

This helps give a prospective buyer an idea of the returns they may expect from your business in the future.

You can estimate the future profit of your business by looking at any trends in your business finances from past years. You can also investigate the trends of similar businesses in your industry to see how your business compares and how the market is going. This information may be useful when negotiating the final selling price of your business.

FUND RAISING

Fundraising is the process of gathering voluntary contributions of money or other resources, by requesting donations from individuals, businesses, charitable foundations, or governmental agencies. Although fundraising typically refers to efforts to gather money for non-profit organizations, it is sometimes used to refer to the identification and solicitation of investors or other sources of capital for non-profit enterprises.

The essential points pertaining to fund raising are as follows:

1. Fundraising for non-profit organizations
2. Sources for raising funds
3. How to be a fundraiser?
4. Crowdfunding: Is it a best way of fundraising?
5. Fundraising websites

1) Non-profit organizations and fundraising:

Most organizations, especially non-profits obtain funds from funding agencies. Depending on their area of work such as research, religious, disaster management, relief work, etc. these organisations can apply for funds from agency that support those causes. Natural disasters also get fundraising.

Other non-profit campaigns are those for political parties. Various political organizations across the globe use crowd funding techniques to raise funds. In fact, in countries like the United States, the government conducts pledge drives, to raise funds from the people for public broadcasting stations. In India, contributing to political parties is tax exempt!

Raising funds is always a challenge but there are some easy, established ways for non-profit organizations to raise funds. Here are a few of those ways:

- i) Capital campaigns
- ii) Support from corporates
- iii) Membership campaigns
- iv) Special events

i) **Capital campaigns:**

Capital campaigns are time-limited. In such campaigns, the organisation has to raise a significant amount of funds, in a limited amount of time for their project. This kind of campaign is usually used for the construction or other infrastructure. The funds raised can also be used as an endowment in the future. These type of campaigns need volunteers to help and coordinate and usually span over 2-4 years. A lot of strategic planning is necessary in such campaigns otherwise, it may not succeed.

ii) **Support from corporates:**

The greatest advantage of corporate funding is that it builds successful corporate partnerships and also allows expansion of the volunteer base. Another advantage of corporate funding is that it can be pulled off in a measly

budget. A company gives a percentage of its money towards philanthropic projects. Corporate giving usually happens when both the company and the non-profit have a mutual gain. The benefits include cause branding and cause-sponsorship. Non-profits have monetary benefits from corporate sponsorships whereas corporations gain visibility among the public.

iii) **Membership campaigns:**

These campaigns are philanthropy-driven which help to convert prospects to regular donors. It builds strong bonds and strengthens relationships between the donor and the organization. The major advantage of conducting membership campaigns is that it increases donor loyalty and maximizes trust. The donors who get converted as members feel a sense of responsibility towards the cause and organization may offer other services apart from money, such as volunteering, etc.

Before starting a membership campaign, one must think of questions like, “what benefits members have over donors” and “What should be the cost of the base membership fee?”.etc

iv) **Special events:**

Special events are a great way to gain publicity for the organization. People get to know about the agenda of the organization. Conducting special events and raising funds via that is one of the common methods used by non-profits. Special events may include concerts, auctions, contests, etc. Very often, pop singers like Britney Spears, conduct charity concerts to their bit towards the cause.

2) **Sources for raising funds:**

Funds can be raised from many sources by using various different methods of fundraising. One can apply for funds from government grants, non-profit organizations and foundations or big corporations and even crowd funding.

The main sources for raising funds are:

- **Raising funds via grants:**

Many established and well-connected non-profits organizations raise funds through grants. It is an ideal source of funding for non-profit organizations of any size. This kind of fundraising is called **grant funding**. One has to be skilled and well established to apply for this type of funding. The grant needs to be applied for with a formal proposal.

The proposal must be well-written clearly stating exactly what you will do with the funds. The fund utilisation and your intention as well the background of your project must be in it.

A grantor won't only be impressed by the way you write a grant, but, will want to check your financial records and your accounting. Only after all these hygiene checks, will the grant move forward. After you've successfully got a grant, the organization must send follow-up reports to the grantor to show how the money has been used and how your project is progressing.

- **Individual donations:**

Individual donations can start pouring in as people become aware of your work and your cause. It also helps in branding your non-profit organization. Many individuals want to donate and support you in your work. It is a good idea to build up a donor base from your alumni networks, private foundations, friends, and corporations. Perhaps the most interesting thing about supporters is that they can contribute not only financially, but also give gifts and volunteer their services and time. Once you gather enough supporters, you can take it online and begin with the process of crowdfunding.

- **Services and Sales:**

Fundraising involves people donating money to your cause and this money can be generated through sales.

For example, an NGO can make handcrafted wallets and sell it to individuals and use the money generated to further strengthen their work. Small items like T-shirts, bags, wallets, and craft items work well for fundraising sales. It is not uncommon for organizations to fundraise through events like charity balls and galas.

3) How to be a fundraiser:

Superstar fundraisers are not born, they're made. Anyone can be superstar fundraiser with a little amount of effort and by knowing the tricks of the trade.

To start a fundraising campaign, you must choose two ways, Online or offline. Let us say, you want to start it online because offline fundraising requires more effort and initial funds for branding.etc

Raising funds online in just 5 simple steps:

1. Choose a good fundraising platform like Milaap, ketto.etc which will suit your needs.
2. The next step is to register as a fundraiser and begin your campaign.
3. Enter all the details of your cause. It can be charitable or any social/personal cause.
4. Enter all the details and fill the columns with relevant pictures.
5. You must enter a set target/goal of how much amount of money would be sufficient for your needs. This is really important.

That's it! Now, wait for your campaign to be published on the site.

What to do after it is published:

One cannot sit calm and wait for funds to appear magically in their account after the campaign is published. After it is published, one must publicize it by sharing it among their circle of friends and explain them about why you want to raise funds. Let them spread the cause in their social networking circles and it goes on. That's the beauty of crowdfunding. In the meantime, one must also be noting down feedback from different people. If everything is done right, the campaign at the end of the goal period becomes a huge success!

4) Crowdfunding : Is it a best way of fundraising?

Crowdfunding is an easier and less complex way of getting funds. The cause is presented in a clear format to people and if interested, they support the cause by donating money. Crowdfunding is the future and has changed the way how funding works. Crowdfunding can be done both offline and online depending on one's choice. Online is preferable as it has the capacity to make a cause go viral at the cost of a shoestring.

5) Fundraising websites:

Fundraising can be a tough task, but, it's a lot easier job right now, thanks to these fundraising websites which help raise funds online at the click of a button by means of crowdfunding.

Example: The most popular website in India is: **IMPACTGURU.com** which raises the fund from the market in three simple steps:

1. Start A Fundraiser

- Pay attention to the headline
- Write a compelling story

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- Add videos and pictures

2. Share A Fundraiser

- Put it on social media
- Create a Whatsapp and email group
- Create a support group

3. Raise Funds

- Multiple Payment Options
- Raise Funds from across the world
- Quick Fund Transfer

PURPOSE OF VALUATION IN FUND RAISING

Raising money is a complicated multi-stage process that successful entrepreneurs master from first contact (or earlier) right through to cash in the bank. Establishing a valuation is one of the most important steps along the way. Aim too high and investors will look the other way. Aim too low and you will leave money on the table, or worse, you will lose investors who think you lack ambition.

One strange fact about the fundraising process is that the more you raise, the higher the valuation tends to be. This seemingly illogical link between round size and share price comes because investors want to make sure founders retain enough equity to keep them motivated, even after multiple rounds of financing. As a result the market has settled on the convention that early rounds of investment typically result in ~20% dilution. Therefore, given the dilution is fixed, if the round size goes up, increasing the valuation is the only way to square the circle.

The below listed are the important parameters to be kept in mind while doing valuation of a business for fundraising:

1. To work out how much money you want to raise. The short answer is that you should raise enough money to get you to your next valuation milestone and then have time left to go out and find the next round.
2. To do is to put yourself inside the mind of your target VC. If you can second guess how they would value your business then you can make sure the amount you are raising is consistent with the 10-25% dilution guideline and structure your pitch accordingly.

Different ways of valuation during fund raising

1. The right way for a VC to value a company

The right way for a VC to value a business is to estimate what it would fetch on a successful sale and then divide that figure by the return appropriate for the risk involved. So if the planned exit is for Rs100 million and the investor is targeting a return of around 10x then the post-money value today would be Rs10m. If the investment was for Rs2 million then the pre-money would be Rs 8 million (Rs10 million - Rs2 million) and the investor would get a 20% stake.

In practice it is slightly more complicated than this because adjustments need to be made for liquidation preference and dilution from further rounds.

A number of data points will be taken into consideration when forecasting the exit value:

- Likely turnover and profits (losses) of the target company at the point of exit
- Revenue and profit multiples that likely acquirers trade at

- Multiples that other similar businesses have been acquired at
- Track record of potential acquirers in making high value acquisitions
- Strategic importance of the target company to potential acquirers

After projected exit value the next driver of the target valuation is the target return. There is very little science here and most VCs think of the risk inherent in a startup, and hence the required target return, in three bands – low risk = 3x return, medium risk = 5x return, and high risk = 10x return. At the early stages at which Forward Partners invests, all companies are high risk and therefore in the 10x band.

2. The rules of thumb

One enduring rule of thumb is that an investment round should get around 10-25% of a company. When they hear how much a company is planning to raise the first reaction of many investors is to multiply the amount by four to ten and see if that feels like an appropriate post money valuation range for the business. If it does then the deal immediately feels like it is more likely to happen.

3. Market forces

In practice valuations are arrived at by VCs figuring out what they think is a fair valuation using the methodology and rules of thumb described above and then stretching them up or down depending on the prevailing market conditions and the competition for an individual deal.

If you are successful in making your deal competitive, or in creating that impression (and many great entrepreneurs excel at this) then VCs will often look again at their analysis and see if they can justify a higher valuation. The most common route to justify a higher valuation is to look again at the exit valuation and work to build a stronger case for a larger exit.

Having developed a view on what the valuation of your business might be, the next step is to test the market. The best way of doing that is talk with investors. Ideally you will be doing this 2-3 months before you plan to start your fundraising process and you will also use the meetings to warm people up, determine interest in your company more generally and prioritise your list of investor targets.

To maximize the usefulness of the feedback it's helpful to present investors with a wide valuation range. Rather than ask directly about the valuation it's good practice to focus on the amount being raised and the target dilution. Because the amount raised and the dilution combine to determine the valuation, relatively small ranges of raise, size and dilution amount to a large range of valuations. For example, saying you are thinking of raising Rs 2m-2.5m for 15-20% dilution is equivalent to saying you are thinking of raising at Rs 8-14.1m pre-money, but sounds more credible because the ranges are tighter.

When you present the valuation range look for the body language clues as well as the straight up verbal response. Remember that most investors want to keep their options open so to give themselves the best chance of winning the deal they will be wary of talking down the valuation, so evaluate the feedback in that context. Also remember that the investor probably hasn't yet worked out how much they like your company, which also makes it hard for them to know how high they would want to push the valuation.

Then once you have received feedback from a few investors you are ready to make a decision on how much you will raise and how you will approach the valuation issue in the formal fundraising process. Perhaps the most important question is whether to put forth a valuation or to ask your investor to price the round. There is no right answer. Here are a few of the issues to consider:

- If you are raising from experienced investors ask them to price the round. You could maybe give them an indicative range, but if they go first you stand a better chance of getting to their best price.
- When raising from angels it's generally best to tell them the valuation of the round. They are often less experienced, will have less recent transaction data to help them, often don't have much time to think

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about valuation, and generally don't want the responsibility of setting a valuation that other angels have to follow.

- If you want to close quickly, getting a number out there early will help
- When a deal is hot it's hard for investors to know how high they should push the valuation. Giving them a number can help nudge them higher.

Finally, remember that the effective valuation is a combination of the headline pre-money, any preference structure investors ask for, and any increase in the pre-money option pool. At the early stage it's imperative not to get seduced by investors who offer a big headline price but then claw it back via structure or the option.

VOLUNTARY ASSESSMENT

At times, the management wants to know the true value and fair value of the business for which they undertake the exercise of voluntary assessment for internal management purpose and future decision making.

At the time of assessing the true value and fair value of the business it will be important to due the valuation of the business.

The key facts for doing valuation for Voluntary Assessment are:

1. Price is not the same as Value

The Value of a business, by whatever valuation method it is obtained, is not the selling price of the business. Value is an economic concept based on certain data & assumptions, however Price is what a Buyer is willing to pay keeping in consideration the Economic and Non Economic factors like Emotions, Perception, Greed Etc which cannot be valued as such.

2. Value varies with Person, Purpose and Time

The Value is a subjective term and can have different connotations meaning different things to different people and the result may not be the same, as the context or time changes.

3. Transaction concludes at Negotiated Prices

Though the value of a business can be objectively determined employing valuation approaches, this value is still subjective, dependent on buyer and seller expectations and subsequent negotiations and the Transaction happens at negotiated price only.

4. Valuation is Hybrid of Art & Science

Valuation is more of an art and not an exact science. The Art is Professional Judgment and Science is Statistics. Mathematical certainty is neither determined nor indeed is it possible as use of professional judgment is an essential component of estimating value

TAX VALUATION

Tax valuations are important because they can drive the tax charge. Tax valuations are different to other valuations and must be performed within certain parameters which are derived from a body of case law. Valuations team offers a deep specialism in the valuation of unquoted business assets, including shares and intangibles, and the negotiation of values for these assets.

What is Tax Valuation ?

- Helping taxpayers understand the value that tax authorities are likely to place on business assets so that they can plan accordingly. This includes intangibles, private companies, private company shares, partnership interests and more. Values for tax purposes can differ widely from valuations performed for other purposes, and so it is important that taxpayers take specific tax valuation advice at an early stage.

- Negotiating values for business assets with the relevant tax authorities on behalf of taxpayers.

When is Tax Valuation required for Gift Tax?

As per Section 56(2)(vii),(viiia),(x) and(viib) of Income Tax Act 1961, issue & transfer of shares of companies in which public is not substantially interested for nil/adequate consideration is subjected to tax at fair value.

Approaches & Methodologies for tax valuation of Gift Tax?

The fair value needs to be determined in accordance with rule 11U, 11UA,11UAA of Income Tax Rules 1962. The rules have prescribed DCF Method for determination of maximum value for issue of shares & Net Assets Value Method for transfer of shares.

When is Tax Valuation required for Transfer Pricing?

As per Section 92C of the Income Tax Act, any international transaction between associated entities needs to be done at Arm's Length Price. Now, even in case of Domestic related party transactions above INR20 Crore in a year, applicability of transfer pricing provisions has got triggered in case where issue or transfer of shares, business or certain rights (intangibles) is involved & required valuation.

Valuation for Capital Gain Purposes?

Valuation of Capital gain purposes Sec50 CA is a special provision for determination of minimum consideration in case of transfer of unquoted shares, being a capital asset.

Sec 50D states that where consideration for transfer of a capital asset is not ascertainable, its fair market value shall be determined to be its consideration.

When is Tax Valuation required for Indirect Transfer Tax Provisions?

Under Section 9 of the Income Tax Act, 1961 (the Act), income arising from indirect transfer of assets situated in India is deemed to accrue or, arise in India. The share or interest is said to derive its value substantially from assets located in India, fair market value (FMV) of assets located in India comprise at least 50% of the FMV of total assets of the company or equity. The computation of FMV of Indian & global assets is to be in prescribed manner.

FINANCE

In finance, valuation is the process of determining the present value (PV) of an asset. Valuations can be done on assets (for example, investments in marketable securities such as stocks, options, business enterprises, or intangible assets such as patents and trademarks or on liabilities (e.g., bonds issued by a company). Valuations are needed for many reasons such as investment analysis, capital budgeting, merger and acquisition transactions, financial reporting, taxable events to determine the proper tax liability, and in litigation

Valuation of financial assets is done generally using one or more of the following types of models but see also, generally:

1. Absolute value models ("Intrinsic valuation") that determine the present value of an asset's expected future cash flows. These kinds of models take two general forms: multi-period models such as discounted cash flow models, or single-period models such as the Gordon model (which, in fact, often "telescope the former). These models rely on mathematics rather than price observation. See #Discounted cash flow valuation.
2. Relative value models determine value based on the observation of market prices of 'comparable' assets, relative to a common variable like earnings, cashflows, book value or sales. This result, will often be used to complement / assess the intrinsic valuation. See #Relative valuation.
3. Option pricing models, in this context, are used to value specific balance-sheet items, or the asset itself,

when these have option-like characteristics. Examples of the first type are warrants, employee stock options, and investments with embedded options such as callable bonds; the second type are usually real options. The most common option pricing models employed here are the Black–Scholes–Merton models and lattice models. This approach is sometimes referred to as contingent claim valuation, in that the value will be contingent on some other asset; see #Contingent claim valuation.

Common terms for the value of an asset or liability are market value, fair value, and intrinsic value. The meanings of these terms differ. For instance, when an analyst believes a stock's intrinsic value is greater (less) than its market price, an analyst makes a “buy” (“sell”) recommendation. Moreover, an asset's intrinsic value may be subject to personal opinion and vary among analysts.

USAGE

In finance, valuation analysis is required for many reasons including tax assessment, wills and estates, divorce settlements, business analysis, and basic bookkeeping accounting. Since the value of things fluctuates over time, valuations are as of a specific date like the end of the accounting quarter or year. They may alternatively be mark-to-market estimates of the current value of assets or liabilities as of this minute or this day for the purposes of managing portfolios and associated financial risk (for example, within large financial firms including investment banks and stockbrokers).

Some balance sheet items are much easier to value than others. Publicly traded stocks and bonds have prices that are quoted frequently and readily available. Other assets are harder to value. For instance, private firms that have no frequently quoted price. Additionally, financial instruments that have prices that are partly dependent on theoretical models of one kind or another are difficult to value. For example, options are generally valued using the Black–Scholes model while the liabilities of life assurance firms are valued using the theory of present value. Intangible business assets, like goodwill and intellectual property, are open to a wide range of value interpretations.

It is possible and conventional for financial professionals to make their own estimates of the valuations of assets or liabilities that they are interested in. Their calculations are of various kinds including analyses of companies that focus on price-to-book, price-to-earnings, price-to-cash-flow and present value calculations, and analyses of bonds that focus on credit ratings, assessments of default risk, risk premia, and levels of real interest rates. All of these approaches may be thought of as creating estimates of value that compete for credibility with the prevailing share or bond prices, where applicable, and may or may not result in buying or selling by market participants. Where the valuation is for the purpose of a merger or acquisition the respective businesses make available further detailed financial information, usually on the completion of a non-disclosure agreement.

It is important to note that valuation requires judgment and assumptions:

- There are different circumstances and purposes to value an asset (e.g., distressed firm, tax purposes, mergers and acquisitions, financial reporting). Such differences can lead to different valuation methods or different interpretations of the method results
- All valuation models and methods have limitations (e.g., degree of complexity, relevance of observations, mathematical form)
- Model inputs can vary significantly because of necessary judgment and differing assumptions

Users of valuations benefit when key information, assumptions, and limitations are disclosed to them. Then they can weigh the degree of reliability of the result and make their decision.

ACCOUNTING

Accounting valuation is the process of valuing a company's assets and liabilities for financial reporting purposes.

Several accounting-valuation methods are used while preparing financial statements in order to value assets. Many valuation methods are stipulated by accounting rules, such as the need to use an accepted options model to value the options that a company grants to employees. Other assets are valued simply by the price paid, such as real estate. Typically, fixed assets are valued at the historical price. Marketable securities are valued at the current market price.

Accounting valuation is important because the value of assets on a company's financial statements needs to be reliable. Analysis of this valuation is just as important as the valuation itself. Some assets, such as real estate, which is carried at cost less depreciation, can be carried on the balance sheet at far from their true value. Securities the firm owns for its own investment portfolio versus trading will have their own rules for valuation as well, as will bonds held for investment or trading.

The updated quarterly or yearly information is made available in the form of financial statements and can be found in the investor relations area of most publicly trading firms' websites.

Examples of Valuation Accounts

Now that we know the basics of the valuation account and its purpose, let's take a look at a couple of examples. The credit balance of the **Allowance for Doubtful Accounts** is combined with the debit balance of Accounts Receivable to get the carrying amount of your company's receivables. The Allowance for Doubtful Accounts is an example of a valuation account related to an asset (the company's receivables).

An example of a valuation account based on a liability is the **Discount on Bonds Payable**, whose debit balance is combined with Bonds Payables' credit balance to get the carrying amount of the company's bonds.

Organizing your business' finances into the correct set of accounts will help you gain a better understanding of your company's financial health, and provide you with another tool to make smart business decisions.

INDUSTRY PERSPECTIVE

Ongoing assessment of a industry's value drivers is integral to its success. The valuation process involves both a quantitative and a qualitative assessment of a industry that should be part of any business owner's standard operating procedure as a useful and important business management exercise. A valuation assessment can provide the business owner with meaningful and oftentimes actionable information that highlights the real intrinsic value of the firm and ultimately maximize returns

There are hundreds of value drivers attributable to a business, some of which are industry-specific The top 10 industry's value drivers which lead to success are:

1. Capital Access.

The smaller the company, the more limited its access to debt and equity capital. The company will need to assess the kind of capital needed to achieve its goals.

2. Customer Base.

A solid and diversified customer base is essential for the ongoing viability of a business. When companies grow and prosper by catering only to their largest customers, dependency may increase to the point where too great a percentage of revenues are concentrated with too few customers; companies must manage the allocation of customer concentration to reduce the risk of losing a large source of revenues.

3. Economies of Scale.

As production output increases, businesses typically achieve lower costs per unit. Whether through quantity discounts or spreading capacity costs over higher volumes, larger companies possess distinct advantages in certain operations and markets.

4. Financial Performance.

Financial analysis aids in measuring trends, identifying the assets and liabilities of a company, and comparing the financial performance and condition of the company to other, similarly-positioned firms. Internally prepared and compiled financial statements may hamper management's assessment of performance, causing potential buyers to possibly question the quality of this data.

5. Human Capital.

A company's employees are the heart of an organization. Key value drivers include the knowledge, skills, experience, training, and creative abilities employees bring to a business and the health of its company culture.

6. Market Environment.

Each business is impacted by economic trends and developments in the industry in which it operates. Management must understand how the industry is impacted by economic factors and how the industry is structured to minimize the impact of macro trends on the business.

7. Marketing Strategy and Branding.

Marketing is the link between customers' needs and their response to a company's products/services. Strong branding will not only improve company sales by increased market recognition, it will also provide a clear direction that will improve operational efficiency when tied to the company's mission.

8. Product/Service Offering.

Specialty companies frequently derive their strength from focusing in niche fields, but concentration may create risks from lack of diversification and over dependence on limited markets. Some specialty companies may find their largest customers adopt a policy to deal only with suppliers who offer a broad range of products, forcing them to either expand product offerings or sell out to a larger company. Increasing the diversification reduces risk, which improves value.

9. Strategic Vision.

Most companies put together a one-year budget, but few attempt to put together a business plan or long-term forecast. Valuation is all about future expectations and company management needs a strategic vision to create value. Management must take a look at all the information they've gathered from reviewing their company to divulge a strategic vision that can be passed along to the future owner, providing additional support and assurance of continuity, and even increase, of sales.

10. Technology.

Companies with fewer monetary resources often lack adequate research and development resources, finding it difficult to keep pace with technological changes in their markets. Such companies often face an inescapable need to incur large amounts of capital expenditures in the near future or allocate resources to a limited number of product development projects. This inevitably results in product or service obsolescence, adverse impact on future growth, and loss of market share. In the meantime, larger companies are in a better position to demonstrate technological expertise by developing products that address emerging customer needs, leading customers to choose the state-of-the-art products, despite the eventual availability of lower cost, lower performance technology.

STATUTORY DIMENSION

Statutory valuations are conducted because either an Act specifically requires valuation for specific purposes or that the implementation of the Act or other Statutory instruments has a financial consequence which triggers the need for the valuation. Because legislation is involved so there will be statutory rules and case laws to interpret and this makes each branch of statutory valuation very specialized.

A statutory valuation is made under the provisions of enabling legislation and sets out the requirements under which the valuation is made and includes the purposes for which it may be used. Statutory valuations are used for revenue generation purposes by applicable authorities (e.g. local governments or the Office of State Revenue). In Queensland, the enabling legislation is the Land Valuation Act 2010 (the Act), which commenced 20 September 2010. This legislation replaced the Valuation of Land Act 1944 (VOLA) with transitional provisions. The Act outlines a framework for making, issuing and storing valuations. The Act however clearly is not a valuation textbook, and as such valuations are to be made having regard not only to the Act but also to the Principles of Valuation and to judicial interpretation in cases brought before relevant courts. Additionally, as part of normal Departmental business the Valuer-General will, from time to time, issue detailed work instructions to departmental staff outlining the required work processes pertaining to the provision of statutory valuations.

Statutory purposes of valuations (Section 6)

Valuations made under the Act are used for a number of purposes, including:

- making and levying local government rates (rating valuation)
- assessing land tax liabilities under the Land Tax Act 2010 (land tax valuation)
- calculating land rentals under the Land Act 1994 (rental valuation)
- where another Act refers to the value or rateable value of land

SOCIETY ANGLE

Valuation plays a very important role in the context of society because valuation is the process of determining the current worth of an asset or a company. An analyst placing a value on a company looks at the company's management, the composition of its capital structure, the prospect of future earnings and market value of assets.

On disclosure of the value of the company to the society, it stands to gain in the following manner:

1. Fair image of the company
2. What is the right time to invest in the company
3. How company is benefiting the society.
4. What will be the strategic vision of the company in the future.
5. How valuation of the company is going to impact the economies of scale.
6. Society as a stakeholder of the business. : Analysis of society from a stakeholder perspective helps companies to determine risk and future opportunities
7. Impact of valuation of a company or business in the long term from society's perspective, i.e. if a business valuation is not conducted appropriately, then how it creates financial loss to the society. y as a whole.
8. You may incorporate such examples wherein due to disinvestments or divestiture of a firm or company, adequate consideration was not received due to gaps in valuation and it resulted in loss of public money.

Stakeholders have always mattered to a company. How stakeholders view a company, what they expect of the company and how they understand the company's impact on society and the environment matters to business value. A growing number of shareholders agree with the strategic vision of the company in the future. (This statement seems to be incomplete, please add the required contents). For example, positive community relations have had a significant effect on mining companies' financial valuations which consequently emerged

as a key factor in production alongside investments in capital and labor. (please see whether this phrase marked in red is ok, as in the previous phrase there was some missing linkages).

Business can positively influence the fabric of the society. It can build and maintain social capital through its core operations; the goods and services it provides; and the activities supported through increasingly global and complex supply chains.

For example, assume an exit valuation of \$100 million and the VC owns 20% of the company at the time of the exit. The VC would earn \$20 million on their investment at exit. If the VC invested \$1 million into the company, they would make 20 times their investment. If the VC owned 20% for a \$1 million investment, then the post-money valuation of the company at the time of the initial investment was \$5 million. As you can see, investors use the post-money valuation to estimate the price an investment must command when they exit or sell the company.

Investors will use these methodologies to set a valuation range. They will have a maximum valuation based on their view of the future valuation and the perceived competitiveness for the deal, but will try to keep the price they pay closer to the lower part of the range.

How to maximize your valuation with society angle

- Make a good case. Show the investor why there is huge potential exit value for your company.
- Maximize the potential exit valuation by removing any doubt or obstacle that the investor perceives as limiting the upside valuation. For example, if you have gaps in your management team, then identify the people that would join the team after the funding is secured.
- Do your homework. Understand the valuations of other companies at slightly later stages. Identify and understand the gaps (technical or commercial) between your business and theirs. Then, focus your company's business plan on closing these gaps.
- Find an investment competitor. If there is competition for your deal, an investor will be more likely to give you a higher valuation. However, investors may speak to each other, so do not "play that card" if the competition does not exist.
- When you are first given a valuation, ask for a higher valuation. Pushing back demonstrates that you're confident in your business and a good negotiator. Of course, when pushing back, provide evidence and arguments as to why the valuation should be higher. According to Guy Kawasaki's *The Art of the Start*, ask for a valuation that is 25% higher than the first offer.
- Take the money and get to work if the valuation is reasonable. In most cases, businesses either make more money than you dreamt or they do not work at all. Neither the valuation nor the investor's specific percentage will significantly affect the company's ultimate success.
- Talk to your advisors, board members consultants and other industry players to determine if the deal you're getting reflects current valuations.
- Consider taking a lower valuation from the "better" investor, if you think that one investor brings more to the table than another.

SUMMARY

- Business Valuation is the process of determining economic value of a business or company.
- Business valuation can depend on the values of the assessor, tangible and intangible assets, goodwill and varying economic conditions.
- The main Purpose of Valuation are Mergers & Acquisition, Sale of a Business, Fund Raising, Voluntary

Assessment, Taxation, Finance, Accounting, Industry Perspective, Statutory Dimensions, Society Angle.

- Mergers is the combination of two companies to form one, while Acquisitions is one company taken over by the other.
- In a merger or acquisition transaction, valuation is essentially the price that one party will pay for the other, or the value that one side will give up to make the transaction work.
- A key valuation tool in M&A, discounted cash flow analysis determines a company's current value according to its estimated future cash flows.
- When sold, these assets must be classified as capital assets, depreciable property used in the business, real property used in the business, or property held for sale to customers, such as inventory or stock in trade.
- An interest in a partnership or joint venture is treated as a capital asset when sold. The part of any gain or loss from unrealized receivables or inventory items will be treated as ordinary gain or loss.
- Fundraising is the process of gathering voluntary contributions of money or other resources, by requesting donations from individuals, businesses, charitable foundations, or governmental agencies.
- Many established and well-connected non-profits raise funds through grants. It is an excellent source of funding for non-profits of any size. This kind of fundraising is called grant funding.
- Capital campaigns are time-limited. In such campaigns, the organisation has to raise a significant amount of funds, in a limited amount of time for their project.
- Crowd funding can be done both offline and online depending on one's choice.
- The management wants to know the true value and fair value of the business for which they undertake the exercise of voluntary assessment for internal management purpose and future decision making.
- Tax valuations are different to other valuations and must be performed within certain parameters which are derived from a body of case law.
- In finance, valuation is the process of determining the present value (PV) of an asset.
- Accounting valuation is the process of valuing a company's assets and liabilities for financial reporting purposes.
- The valuation process involves both a quantitative and a qualitative assessment of a industry that should be part of any business owner's standard operating procedure as a useful and important business management exercise.
- Statutory valuations are conducted because either an Act specifically requires valuation for a specific purpose or that the implementation of the Act or other Statutory instruments has a financial consequence which triggers the need for the valuation.
- Valuation plays a very important role with contest of society angle because valuation is the process of determining the current worth of an asset or a company.

SELF TEST QUESTIONS

- Ques 1. What is management's long-term outlook? When did the company last write a formal business plan? Is the company's strategy in tune with its customers' demographics, tenure, needs, and demands?

- Ques 2. How many resources does the company allocate to R&D? Is their use of technology up-to-date? Are there impending technological changes that could negatively impact the company's product/service offering?
- Ques 3. What do you mean by business valuation? Explain the purpose of valuation.
- Ques 4. What is the purpose of valuation at the time of mergers & acquisition?
- Ques 5. Give the examples of valuation in finance?
- Ques 6. How crowd funding is different from fundraising?
- Ques 7. Explain in detail Statutory valuations?
- Ques 8. What are the key facts for doing valuation for Voluntary Assessment?

LIST OF FURTHER READINGS

- 1) Valuation: Measuring and Managing the Value of Companies by McKinsey & Company.
- 2) The Little Book of Valuation: How to Value a Company, Pick a Stock and Profit by Aswath Damodaran.
- 3) Study Material for Educational Course – Asset class: Securities or Financial Assets, Registered Valuers Organisation (A wholly owned subsidiary of ICSI and registered with IBBI)

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Lesson 3

International Valuation Standards Overview

LESSON OUTLINE

- Introduction
- International Valuation Standards (IVS) Arrangement
- International Valuation Standards (IVS) Framework
 - Compliance with Standards
 - Assets and Liabilities
 - Valuer
 - Objectivity
 - Competence
 - Departures
- IVS General Standard
 - IVS 101 Scope of Work
 - IVS 102 Investigation & Compliance
 - IVS 103 Reporting
 - IVS 104 Bases of Value
 - IVS 105 Valuation Approaches & Methods
- IVS Asset Standard
 - IVS 200 Businesses and Business Interests
 - IVS 210 Intangible Assets
 - IVS 300 Plant and Equipment
 - IVS 400 Real Property Interests
 - IVS 410 Development Property
 - IVS 500 Financial Instruments
- Indian Valuation Standards (IVSs) Issued By ICAI
- Applicability of Indian Valuation Standards
- SUMMARY
- SELF TEST QUESTIONS

LEARNING OBJECTIVES

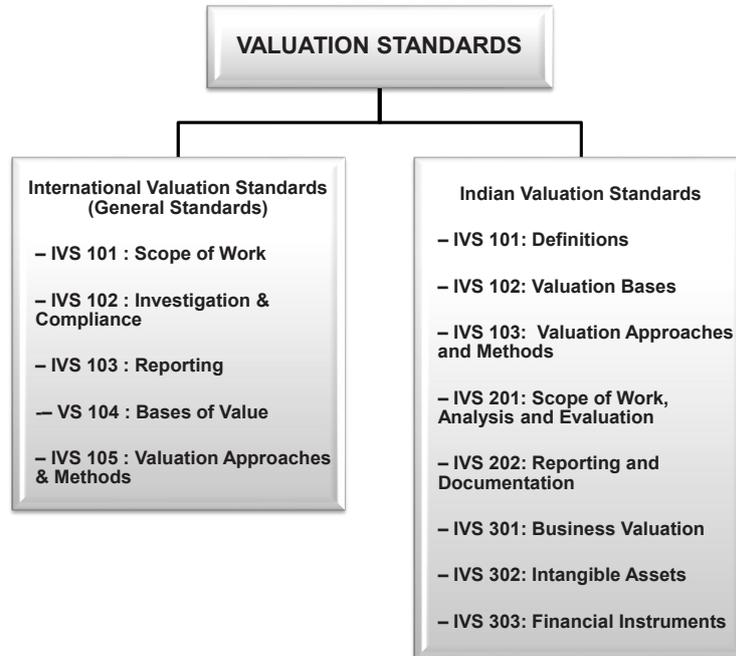
International Valuation Standards (IVS) are a fundamental part of the financial system, along with high levels of professionalism in applying them. The International Valuation Standards (IVS) are standards for undertaking valuation assignments using generally recognized concepts and principles that promote transparency and consistency in valuation practice. The IVSC also promotes leading practical approaches for the conduct and competency of professional valuers. The learning objective of this chapter is to have an overview of International Valuation Standards which is further split in three broad areas:

- IVS Framework
- IVS General Standard
- IVS Asset Standard

ORIENTATION

This study lesson is considered as compulsory as the deep knowledge of both International and Indian Valuation Standards assist in understanding the various critical issues pertaining to valuation of tangibles and intangibles. Further, in order to ensure transparency and consistency in valuation process, one needs to be conversant with the valuation standards.

FAMILY TREE OF CONCEPTS



INTRODUCTION

The International Valuation Standards Council (IVSC) is an independent, not-for-profit organization committed to advancing quality in the valuation profession. The primary objective of IVSC is to build confidence and public trust in valuation by producing standards and securing their universal adoption and implementation for the valuation of *assets* across the world. The International Valuation Standards (IVS) is a fundamental part of the financial system with high level of professionalism.

Valuations are widely used and relied upon in financial and other markets, whether for inclusion in financial statements, for regulatory compliance or to support secured lending and transactional activity. The International Valuation Standards (IVS) are standards for undertaking valuation assignments using generally recognized concepts and principles that promote transparency and consistency in valuation practice. IVSC promotes leading practice approaches for proper execution and effective competency of leading professionals.

The IVSC is the body responsible for setting the International Valuation Standards (IVS). The Board has autonomy in the development of its agenda and approval of its publications. In developing the IVS, the Board:

- ❖ Follows established due process in the development of any new standard, including consultation with stakeholders (valuers, users of valuation services, regulators, valuation professional organizations, etc) and public exposure of all new standards or material alterations to existing standards,
- ❖ Liaises with other bodies that have a standard-setting function in the financial markets,

- ❖ Conducts outreach activities including round-table discussions with invited constituents and targeted discussions with specific users or user groups.

The objective of the IVS is to increase the confidence and trust of users of valuation services by establishing transparent and consistent valuation practices. A standard will do one or more of the following:

- ❖ identify or develop globally accepted principles and definitions,
- ❖ identify and promulgate considerations for the undertaking of valuation assignments and the reporting of valuations,
- ❖ identify specific matters that require consideration and methods commonly used for valuing different types of *assets* or liabilities.

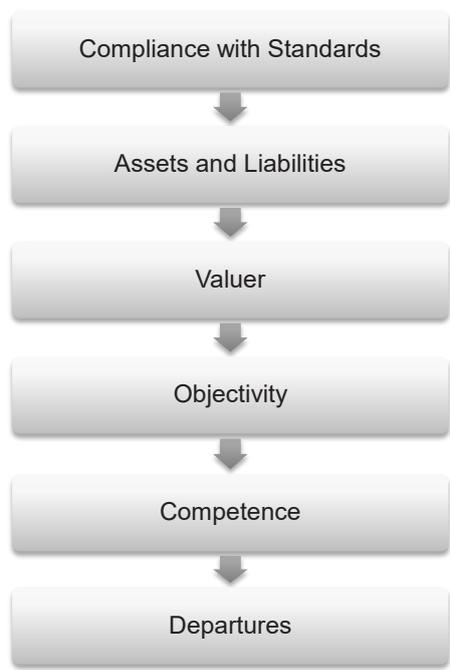
The IVS consist of mandatory requirements that *must* be followed in order to state that a valuation was performed in compliance with the IVS. Certain aspects of the standards do not direct or mandate any particular course of action, but provide fundamental principles and concepts that *must* be considered in undertaking a valuation.

ARRANGEMENTS of IVS



The IVS Framework

This serves as a preamble to the IVS. The IVS Framework consists of general principles for valuers following the IVS regarding objectivity, judgment, competence and acceptable departures from the IVS.



Compliance with Standards

When a statement is made that a valuation will be, or has been, undertaken in accordance with the IVS, it is implicit that the valuation has been prepared in compliance with all relevant standards issued by the IVSC.

Assets and Liabilities

The standards can be applied to the valuation of both *assets* and liabilities. To assist the legibility of these standards, the words *asset* or *assets* have been defined to include liability or liabilities and groups of *assets*, liabilities, or *assets* and liabilities, except where it is expressly stated otherwise, or is clear from the context that liabilities are excluded.

Valuer

Valuer has been defined as “an individual, group of individuals, or a firm possessing the necessary qualifications, ability and experience to undertake a valuation in an objective, unbiased and competent manner. In some *jurisdictions*, licensing is required before one can act as a *valuer*. Because a valuation reviewer *must* also be a *valuer*, to assist with the legibility of these standards, the term *valuer* includes *valuation reviewers* except where it is expressly stated otherwise, or is clear from the context that *valuation reviewers* are excluded.

‘Registered Valuer’ means a person registered as a Valuer under Chapter XVII of the Companies Act 2013.

Registration as Valuers.

(1) For the purposes of sub-section (1) of section 247, the Central Government or any authority, institution or agency, as may be notified by the Central Government, shall maintain a register to be called as the Register of Valuers in which there shall be registered the names, address and other details of the persons registered as valuers in pursuance of section 247.

(2) The following persons shall be eligible to apply for being registered as a valuer:

- (a) a Chartered Accountant, Company Secretary or Cost Accountant who is in whole-time practice, or retired member of Indian Corporate Law Service or any person holding equivalent Indian or foreign qualification as the Ministry of Corporate Affairs may recognize by an order; provided that such foreign qualification acquired by Indian citizen.
- (b) a Merchant Banker registered with the Securities and Exchange Board of India, and who has in his employment person(s) having qualifications prescribed under (a) above to carry out valuation by such qualified persons;
- (c) Member of the Institute of Engineers and who is in whole-time practice;
- (d) Member of the Institute of Architects and who is in whole-time practice;
- (e) A person or entity possessing necessary competence and qualification as may be notified by the Central Government from time to time.

Provided that persons referred to in (a), (c) and (d) and qualified person in (b) above shall have not less than five years continuous experience after acquiring membership of respective institutions.

Provided further that in the case of merchant banker the valuation report shall be signed by the qualified person. Provided also that persons referred to in (a) and (b) shall be in respect of requirement for a “financial valuation” and the persons referred to in (c) and (d) shall be in respect of requirement for a “technical valuation” and a person or a firm or Limited Liability Partnership or merchant banker possessing both the qualifications may act in dual capacity.

Explanation: For the purposes of this rule, a person shall be deemed “to be in whole-time practice”, when individually or in partnership or in limited liability partnership or in merchant banker with other persons in

practice who are members of other professional bodies, he, in consideration of remuneration received or to be received:

- (i) engages himself in the practice of valuation; or
- (ii) offers to perform or performs services involving valuation of any assets with the object of arriving at financial value of the asset being valued; or
- (iii) renders professional services or assistance in or about matters of principle or detail relating to valuation.

Objectivity

The process of valuation requires the *valuer* to make impartial judgments as to the reliability of inputs and assumptions. For a valuation to be credible, it is important that those judgments are made in a way that promotes transparency and minimizes the influence of any subjective factors on the process. Judgment used in a valuation *must* be applied objectively to avoid biased analyses, opinions and conclusions.

Competence

Valuation must be prepared by an individual or firm having the appropriate technical skills, experience and knowledge of the subject of the valuation, the market(s) in which it trades and the *purpose of the valuation*.

If a valuer does not possess all the necessary technical skills, experience and knowledge to perform all aspects of a valuation, it is acceptable for the *valuer* to seek assistance from specialists in certain aspects of the overall assignment, providing this is disclosed in the scope of work (see IVS 101 *Scope of Work*) and the report (see IVS 103 *Reporting*).

The valuer must have the technical skills, experience and knowledge to understand, interpret and utilize the work of any specialists.

Departures

A “*departure*” is a circumstance where specific legislative, regulatory or other authoritative requirements *must* be followed that differs from some of the requirements within IVS. Departures are mandatory in that a *valuer must* comply with legislative, regulatory and other authoritative requirements appropriate to the *purpose* and *jurisdiction* of the *valuation* to be in compliance with IVS. A *valuer may* still state that the valuation was performed in accordance with IVS when there are departures in these circumstances.

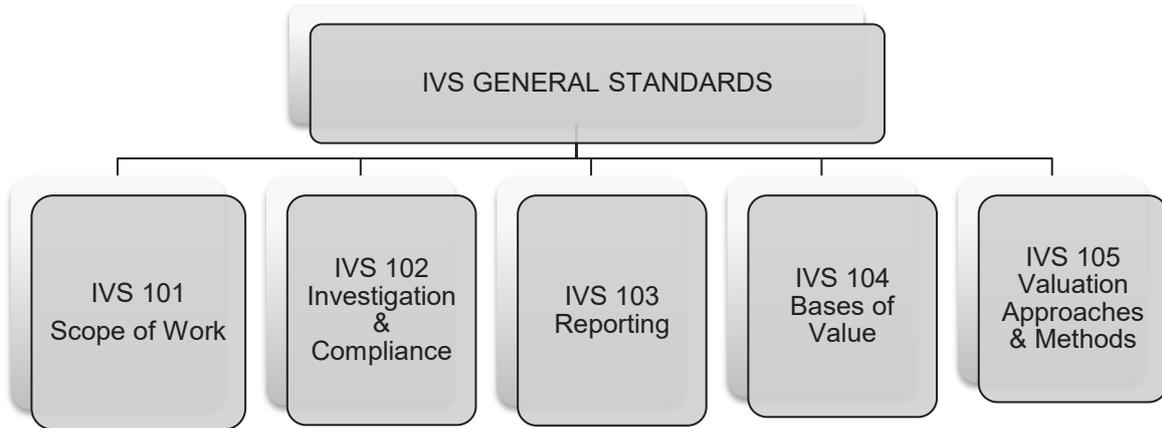
The requirement to depart from IVS pursuant to legislative, regulatory or other authoritative requirements takes precedence over all other IVS requirements.

If there are any departures that *significantly* affect the nature of the procedures performed, inputs and assumptions used, and/or valuation conclusion(s), a *valuer must* also disclose the specific legislative, regulatory or other authoritative requirements and the *significant* ways in which they differ from the requirements of IVS (for example, identifying that the relevant *jurisdiction* requires the use of only a market approach in a circumstance where IVS would indicate that the income approach *should* be used).

Departure deviations from IVS that are not the result of legislative, regulatory or other authoritative requirements are not permitted in valuations performed in accordance with IVS.

IVS GENERAL STANDARDS

These set forth requirements for the conduct of all valuation assignments including establishing the terms of a valuation engagement, bases of value, valuation approaches and methods, and reporting. They are designed to be applicable to valuations of all types of *assets* and for any *valuation purpose*.



IVS 101: SCOPE OF WORK

- ❖ A scope of work (sometimes referred to as terms of engagement) describes the fundamental terms of a valuation engagement, such as the *asset(s)* being valued, the *purpose of the valuation* and the responsibilities of parties involved in the valuation.
- ❖ This standard is intended to apply to a wide spectrum of valuation assignments, including:
 - valuations performed by *valuers* for their own employers (“in-house valuations”),
 - valuations performed by *valuers* for *clients* other than their employers (“third-party valuations”), and
 - valuation reviews where the reviewer *may* not be required to provide their own opinion of value.

General Requirements

- ❖ All valuation advice and the work undertaken in its preparation *must* be appropriate for the intended *purpose*.
- ❖ A *valuer must* ensure that the intended recipient(s) of the valuation advice understand(s) what is to be provided and any limitations on its use before it is finalized and reported.
- ❖ A *valuer must* communicate the scope of work to its *client* prior to completion of the assignment, including the following:
 - a) *Identity of the valuer*: The valuer may be an individual, group of individual or a firm. If the *valuer* has any material connection or involvement with the subject *asset* or the other parties to the valuation assignment, or if there are any other factors that could limit the *valuer’s* ability to provide an unbiased and objective valuation, such factor *must* be disclosed at the outset. If such disclosure does not take place, the valuation assignment is not in compliance with IVS. If the *valuer* needs to seek *material* assistance from others in relation to any aspect of the assignment, the nature of such assistance and the extent of reliance *must* be made clear.
 - b) *Identity of the client(s) (if any)*: Confirmation of those for whom the valuation assignment is being produced is important when determining the form and content of the report to ensure that it

contains information relevant to their needs.

- c) *Identity of other intended users (if any)*: It is important to understand whether there are any other intended users of the valuation report, their identity and their needs, to ensure that the report content and format meets those users' needs.
- d) *Asset(s) being valued*: The *subject asset* in the valuation assignment *must* be clearly identified.
- e) *The valuation currency*: The currency for the valuation and the final valuation report or conclusion *must* be established. For example, a valuation might be prepared in euros or US dollars. This requirement is particularly important for valuation assignments involving *assets* in multiple countries and/or cash flows in multiple currencies.
- f) *Purpose of the valuation*: The *purpose* for which the valuation assignment is being prepared *must* be clearly identified as it is important that valuation advice is not used out of context or for *purposes* for which it is not intended. The *purpose of the valuation* will also typically influence or determine the basis/bases of value to be used.
- g) *Basis / bases of value used*: As required by IVS 104 *Bases of Value*. This requirement is not applicable to a valuation review valuation basis *must* be appropriate for the *purpose of the valuation*. The source of the definition of any basis of value used *must* be cited or the where no opinion of value is to be provided and the reviewer is not required to comment on the basis of value used.
- h) *Valuation date*: The valuation date *must* be stated. If the valuation date is different from the date on which the valuation report is issued or the date on which investigations are to be undertaken or completed then where appropriate, these dates *should* be clearly distinguished.
- i) *The nature and extent of the valuer's work and any limitations thereon*.
 - *Any limitations or restrictions on the inspection, enquiry and/or analysis* : in the valuation assignment *must* be identified. If relevant information is not available because the conditions of the assignment restrict the investigation, these restrictions and any necessary assumptions or special assumptions made as a result of the restriction *must* be identified.
 - *The nature and sources of information upon which the valuer relies*: The nature and source of any relevant information that is to be relied upon and the extent of any verification to be undertaken during the valuation process *must* be identified.
 - *Significant assumptions and/or special assumptions*: All *significant* assumptions and special assumptions that are to be made in the conduct and reporting of the valuation assignment *must* be identified.
 - *The type of report being prepared*: The format of the report, that is, how the valuation will be communicated, *must* be described.
 - *Restrictions on use, distribution and publication of the report*: Where it is necessary or desirable to restrict the use of the valuation or those relying on it, the intended users and restrictions *must* be clearly communicated.
 - *Valuation to be IVS compliant and values to assess appropriateness of all significant inputs* : The nature of any departures *must* be explained, for example, identifying that the valuation was performed in accordance with IVS and local tax regulations.
 - *Clarity in scope of work* : Wherever possible, the scope of work *should* be established and agreed between parties to a valuation assignment prior to the *valuer* beginning work.

However, in certain circumstances, the scope of a valuation engagement *may* not be clear at the start of that engagement. In such cases, as the scope becomes clear, *valuers must* communicate and agree the scope of work to their *client*.

- *Scope of work to be written in form* : A written scope of work *may* not be necessary. However, since *valuers* are responsible for communicating the scope of work to their *client*, a written scope of work *should* be prepared.
- *Standing engagement instructions* : Some aspects of the scope of work *may* be addressed in documents such as standing engagement instructions, master services agreements or a company's internal policies and procedures.

Changes to Scope of Work

- ❖ Some of the items in may not be determinable until the valuation assignment is in progress, or changes to the scope *may* become necessary during the course of the assignment due to additional information becoming available or matters emerging that require further investigation. As such, whilst the scope of work *may* be established at the outset, it *may* also be established over time throughout the course of the assignment.
- ❖ In valuation assignments where the scope of work changes over time, the items in and any changes made over time *must* be communicated to the *client* before the assignment is completed and the valuation report is issued.

For Example, items such as specifying the legal structure of the business, whether it is a whole or partial interest, whether it is confined to or excludes certain assets or liabilities and the class or classes of shares involved.

IVS 102 INVESTIGATIONS AND COMPLIANCE

General Principle

To be compliant with IVS, valuation assignments, including valuation reviews, *must* be conducted in accordance with all of the principles set out in IVS that are appropriate for the *purpose* and the terms and conditions set out in the scope of work.

Investigations

- ❖ Investigations made during the course of a valuation assignment *must* be appropriate for the *purpose of the valuation* assignment and the basis(es) of value. References to a valuation or valuation assignment in this standard include a valuation review.
- ❖ Sufficient evidence *must* be assembled by means such as inspection, inquiry, computation and analysis to ensure that the valuation is properly supported. When determining the extent of evidence necessary, professional judgement is required to ensure the information to be obtained is adequate for the *purpose of the valuation*.
- ❖ Limits *may* be agreed on the extent of the *valuer's* investigations. Any such limits *must* be noted in the scope of work. If limitations on investigations are so substantial that the *valuer* cannot sufficiently evaluate the inputs and assumptions, the valuation engagement *must* not state that it has been performed in compliance with IVS.
- ❖ When a valuation assignment involves reliance on information supplied by a party other than the *valuer*, consideration *should* be given as to whether the information is credible or that the information *may* otherwise be relied upon without adversely affecting the credibility of the valuation opinion.

Significant inputs provided to the *valuer* (eg, by management/owners), *may* require consideration,

investigation and/or corroboration. In cases where credibility or reliability of information supplied cannot be supported, such information *should* not be used.

- ❖ In considering the credibility and reliability of information provided, *valuers should* consider matters such as:
 - *the purpose of the valuation,*
 - *the significance* of the information to the valuation conclusion,
 - the expertise of the source in relation to the subject matter, and
 - whether the source is independent of either the *subject asset* and/or the recipient of the valuation (see IVS 101 *Scope of Work*).
- ❖ The *purpose of the valuation*, the basis of value, the extent and limits on the investigations and any sources of information that *may* be relied upon are part of the valuation assignment's scope of work that *must* be communicated to all parties to the valuation assignment (see IVS 101 *Scope of Work*).
- ❖ If, during the course of an assignment, it becomes clear that the investigations included in the scope of work will not result in a credible valuation, or information to be provided by third parties is either unavailable or inadequate, the valuation assignment will not comply with IVS.

Valuation Record

A record *must* be kept of the work performed during the valuation process and the basis for the work on which the conclusions were reached for a reasonable period after completion of the assignment, having regard to any relevant statutory, legal or regulatory requirements. Subject to any such requirements, this record *should* include the key inputs, all calculations, investigations and analyses relevant to the final conclusion, and a copy of any draft or final report(s) provided to the *client*.

Compliance with Other Standards

As noted in the IVS *Framework*, when statutory, legal, regulatory or other authoritative requirements *must* be followed that differ from some of the requirements within IVS, a *valuer must* follow the statutory, legal, regulatory or other authoritative requirements (called a “*departure*”). Such a valuation has still been performed in overall compliance with IVS.

Most other sets of requirements, such as those written by Valuation Professional Organisations, other professional bodies, or firms' internal policies and procedures, will not contradict IVS and, instead, typically impose additional requirements on *valuers*. Such standards *may* be followed in addition to IVS without being seen as *departures* as long as all of the requirements in IVS are fulfilled

IVS 103 REPORTING

It is essential that the valuation report communicates the information necessary for proper understanding of the valuation or valuation review. A report must provide the intended users with a clear understanding of the valuation.

To provide useful information, the report must set out a clear and accurate description of the scope of the assignment, its purpose and intended use and disclosure of any assumptions, special assumptions significant uncertainty or limiting conditions that directly affect the valuation.

This standard applies to all valuation reports or reports on the outcome of a valuation review which may range from comprehensive narrative reports to abbreviated summary reports.

For certain asset classes there may be variations from these standards or additional requirements to be reported upon. These are found in the relevant IVS Asset Standards.

General Requirements

- ❖ The *purpose of the valuation*, the complexity of the *asset* being valued and the users' requirements will determine the level of detail appropriate to the valuation report. The format of the report *should* be agreed with all parties as part of establishing a scope of work (see IVS 101 *Scope of Work*).
- ❖ Compliance with this standard does not require a particular form or format of report; however, the report *must* be sufficient to communicate to the intended users the scope of the valuation assignment, the work performed and the conclusions reached.

Valuation Reports

- ❖ Where the report is the result of an assignment involving the valuation of an *asset* or *assets*, the report *must* convey the following, at a minimum:
 - the scope of the work performed,
 - the approach or approaches adopted,
 - the method or methods applied,
 - the key inputs used,
 - the assumptions made,
 - the conclusion(s) of value and principal reasons for any conclusions reached, and
 - the date of the report (which *may* differ from the valuation date).
- ❖ Some of the above requirements *may* be explicitly included in a report or incorporated into a report through reference to other documents (engagement letters, scope of work documents, internal policies and procedures, etc).

Valuation Review Reports

- ❖ Where the report is the result of a valuation review, the report *must* convey the following, at a minimum:
 - the scope of the review performed, including the elements noted in para 20.3 of IVS 101 *Scope of Work* to the extent each is applicable to the assignment,
 - the valuation report being reviewed and the inputs and assumptions upon which that valuation was based,
 - the reviewer's conclusions about the work under review, including supporting reasons, and
 - the date of the report (which *may* differ from the valuation date).
- ❖ Some of the above requirements *may* be explicitly included in a report or incorporated into a report through reference to other documents (eg, engagement letters, scope of work documents, internal policies and procedures, etc).

IVS 104 BASES OF VALUE

Bases of value (sometimes called standards of value) describe the fundamental premises on which the reported values will be based. It is critical that the basis (or bases) of value be appropriate to the terms and *purpose of the valuation* assignment, as a basis of value *may* influence or dictate a *valuer's* selection of methods, inputs and assumptions, and the ultimate opinion of value.

Depending on the basis of value, the assumed transaction could take a number of forms:

- (a) a hypothetical transaction,
- (b) an actual transaction,
- (c) a purchase (or entry) transaction,
- (d) a sale (or exit) transaction, and/or
- (e) a transaction in a particular or hypothetical market with specified characteristics.

The assumed date of a transaction will influence what information and data a *valuer* consider in a valuation. Most bases of value prohibit the consideration of information or market sentiment that would not be known or knowable with reasonable due diligence on the measurement/valuation date by *participants*.

Most bases of value reflect assumptions concerning the parties to a transaction and provide a certain level of description of the parties. In respect to these parties, they could include one or more actual or assumed

- (a) hypothetical parties,
- (b) known or specific parties,
- (c) members of an identified/described group of potential parties,
- (d) whether the parties are subject to particular conditions or motivations at the assumed date (eg, duress), and/or
- (e) an assumed knowledge level of the existing parties.

Valuers must choose the relevant basis (or bases) of value according to the terms and *purpose of the valuation* assignment. The *valuer's* choice of a basis (or bases) of value *should* consider instructions and input received from the *client* and/or its representatives. However, regardless of instructions and input provided to the *valuer*, the *valuer should* not use a basis (or bases) of value that is inappropriate for the intended *purpose of the valuation* (for example, if instructed to use an IVS-defined basis of value for financial reporting *purposes* under IFRS, compliance with IVS *may* require the *valuer* to use a basis of value that is not defined or mentioned in the IVS).

In accordance with IVS 101 *Scope of Work*, the basis of value *must* be appropriate for the *purpose* and the source of the definition of any basis of value used *must* be cited or the basis explained.

Valuers are responsible for understanding the regulation, case law and other interpretive guidance related to all bases of value used.

IVS-Defined Basis of Value

1. Market Value:

Market Value is the estimated amount for which an *asset* or liability *should* exchange on the valuation date between a willing buyer and a willing seller in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion.

2. Market Rent:

Market Rent is the estimated amount for which an interest in real property *should* be leased on the valuation date between a willing lessor and a willing lessee on appropriate lease terms in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion.

3. Equitable Value

Equitable Value is the estimated price for the transfer of an *asset* or liability between identified knowledgeable and willing parties that reflects the respective interests of those parties.

4. Investment Value / Worth

Investment Value is the value of an *asset* to a particular owner or prospective owner for individual investment or operational objectives.

Investment Value is an entity-specific basis of value. Although the value of an *asset* to the owner *may* be the same as the amount that could be realised from its sale to another party, this basis of value reflects the benefits received by an entity from holding the *asset* and, therefore, does not involve a presumed exchange. Investment Value reflects the circumstances and financial objectives of the entity for which the valuation is being produced. It is often used for measuring investment performance.

5. Synergistic Value

Synergistic Value is the result of a combination of two or more *assets* or interests where the combined value is more than the sum of the separate values. If the synergies are only available to one specific buyer then Synergistic Value will differ from Market Value, as the Synergistic Value will reflect particular attributes of an *asset* that are only of value to a specific purchaser. The added value above the aggregate of the respective interests is often referred to as “marriage value.”

6. Liquidation Value

Liquidation Value is the amount that would be realised when an *asset* or group of *assets* are sold on a piecemeal basis. Liquidation Value *should* take into account the costs of getting the *assets* into saleable condition as well as those of the disposal activity

❖ Premise of Value/Assumed Use

A Premise of Value or Assumed Use describes the circumstances of how an *asset* or liability is used. Different bases of value *may* require a particular Premise of Value or allow the consideration of multiple Premises of Value. Some common Premises of Value are:

- highest and best use,
- current use/existing use,
- orderly liquidation, and
- forced sale.

Premise of Value – Highest and Best Use

- ❖ Highest and best use is the use, from a *participant* perspective, that would produce the highest value for an *asset*. Although the concept is most frequently applied to non-financial *assets* as many financial *assets* do not have alternative uses, there *may* be circumstances where the highest and best use of financial *assets* needs to be considered.
- ❖ The highest and best use *must* be physically possible (where applicable), financially feasible, legally allowed and result in the highest value. If different from the current use, the costs to convert an *asset* to its highest and best use would impact the value.
- ❖ The highest and best use for an *asset* *may* be its current or existing use when it is being used optimally. However, highest and best use *may* differ from current use or even be an orderly liquidation.

- ❖ The highest and best use of an *asset* valued on a stand-alone basis *may* be different from its highest and best use as part of a group of *assets*, when its contribution to the overall value of the group *must* be considered.
- ❖ The determination of the highest and best use involves consideration of the following:
 - To establish whether a use is physically possible, regard will be had to what would be considered reasonable by *participants*.
 - To reflect the requirement to be legally permissible, any legal restrictions on the use of the *asset*, eg, town planning/zoning designations, need

to be taken into account as well as the likelihood that these restrictions will change.

Premise of Value – Current Use/Existing Use

Current use/existing use is the current way an *asset*, liability, or group of *assets* and/or liabilities is used. The current use *may* be, but is not necessarily, also the highest and best use.

Premise of Value – Orderly Liquidation

An orderly liquidation describes the value of a group of *assets* that could be realised in a liquidation sale, given a reasonable period of time to find a purchaser (or purchasers), with the seller being compelled to sell on an as-is, where-is basis.

Premise of Value – Forced Sale

The term “forced sale” is often used in circumstances where a seller is under compulsion to sell and that, as a consequence, a proper marketing period is not possible and buyers *may* not be able to undertake adequate due diligence. The price that could be obtained in these circumstances will depend upon the nature of the pressure on the seller and the reasons why proper marketing cannot be undertaken. It *may* also reflect the consequences for the seller of failing to sell within the period available.

A forced sale typically reflects the most probable price that a specified property is likely to bring under all of the following conditions:

- (a) Consummation of a sale within a short time period,
- (b) the *asset* is subjected to market conditions prevailing as of the date of valuation or assumed timescale within which the transaction is to be completed,
- (c) both the buyer and the seller are acting prudently and knowledgeably,
- (d) the seller is under compulsion to sell,
- (e) the buyer is typically motivated,
- (f) both parties are acting in what they consider their best interests,
- (g) a normal marketing effort is not possible due to the brief exposure time, and
- (h) payment will be made in cash

Entity-Specific Factors

For most bases of value, the factors that are specific to a particular buyer or seller and not available to *participants* generally are excluded from the inputs used in a market-based valuation. Examples of entity-specific factors that *may* not be available to *participants* include:

- (a) additional value or reduction in value derived from the creation of a portfolio of similar *assets*,

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- (b) unique synergies between the *asset* and other *assets* owned by the entity,
- (c) legal rights or restrictions applicable only to the entity,
- (d) tax benefits or tax burdens unique to the entity, and
- (e) an ability to exploit an *asset* that is unique to that entity. Standards

Synergies

“Synergies” refer to the benefits associated with combining *assets*. When synergies are present, the value of a group of assets and liabilities is greater than the sum of the values of the individual *assets* and liabilities on a stand-alone basis. Synergies typically relate to a reduction in costs, and/or an increase in revenue, and/or a reduction in risk.

Assumptions and Special Assumptions

In addition to stating the basis of value, it is often necessary to make an assumption or multiple assumptions to clarify either the state of the *asset* in the hypothetical exchange or the circumstances under which the *asset* is assumed to be exchanged. Such assumptions can have a *significant* impact on value.

These types of assumptions generally fall into one of two categories:

- (a) assumed facts that are consistent with, or could be consistent with, those existing at the date of valuation, and
- (b) assumed facts that differ from those existing at the date of valuation.

Transaction Costs

Most bases of value represent the estimated exchange price of an *asset* without regard to the seller’s costs of sale or the buyer’s costs of purchase and without adjustment for any taxes payable by either party as a direct result of the transaction

Examples of the use of Equitable Value include:

- (a) determination of a price that is equitable for a shareholding in a non quoted business, where the holdings of two specific parties *may* mean that the price that is equitable between them is different from the price that might be obtainable in the market, and
- (b) determination of a price that would be equitable between a lessor and a lessee for either the permanent transfer of the leased *asset* or the cancellation of the lease liability.

IVS 105 VALUATION APPROACHES AND METHODS

Consideration *must* be given to the relevant and appropriate valuation approaches. The three approaches described and defined below are the main approaches used in valuation. They are all based on the economic principles of price equilibrium, anticipation of benefits or substitution. The principal valuation approaches are:

- Market approach,
- Income approach, and
- Cost approach

Valuers are not required to use more than one method for the valuation of an *asset*, particularly when the *valuer* has a high degree of confidence in the accuracy and reliability of a single method, given the facts and circumstances of the valuation engagement. However, *valuers should* consider the use of multiple approaches and methods and more than one valuation approach or method *should* be considered and *may* be used to arrive

at an indication of value, particularly when there are insufficient factual or observable inputs for a single method to produce a reliable conclusion. Where more than one approach and method is used, or even multiple methods within a single approach, the conclusion of value based on those multiple approaches and/or methods *should* be reasonable and the process of analysing and reconciling the differing values into a single conclusion, without averaging, *should* be described by the *valuer* in the report.

MARKET APPROACH

The market approach provides an indication of value by comparing the *asset* with identical or comparable (that is similar) *assets* for which price information is available.

The market approach *should* be applied and afforded *significant weight* under the following circumstances:

- the subject *asset* has recently been sold in a transaction appropriate for consideration under the basis of value,
- the subject *asset* or substantially similar *assets* are actively publicly traded, and/or there are frequent and/or recent observable transactions in substantially similar *assets*.

When using the market approach under the following circumstances, a *valuer should* consider whether any other approaches can be applied and *weighted* to corroborate the value indication from the market approach:

- (a) Transactions involving the subject *asset* or substantially similar *assets* are not recent enough considering the levels of volatility and activity in the market.
- (b) The *asset* or substantially similar *assets* are publicly traded, but not actively.
- (c) Information on market transactions is available, but the comparable *assets* have *significant* differences to the subject *asset*, potentially requiring subjective adjustments.
- (d) Information on recent transactions is not reliable (ie, hearsay, missing information, synergistic purchaser, not arm's-length, distressed sale, etc).
- (e) The critical element affecting the value of the *asset* is the price it would achieve in the market rather than the cost of reproduction or its income-producing ability.

Market Approach Methods

Comparable Transactions Method:

The comparable transactions method, also known as the guideline transactions method, utilises information on transactions involving *assets* that are the same or similar to the subject *asset* to arrive at an indication of value.

The key steps in the comparable transactions method are:

- (a) identify the units of comparison that are used by *participants* in the relevant market,
- (b) identify the relevant comparable transactions and calculate the key valuation metrics for those transactions,
- (c) perform a consistent comparative analysis of qualitative and quantitative similarities and differences between the comparable *assets* and the subject *asset*,
- (d) make necessary adjustments, if any, to the valuation metrics to reflect differences between the subject *asset* and the comparable *assets*
- (e) apply the adjusted valuation metrics to the subject *asset*, and

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- (f) if multiple valuation metrics were used, reconcile the indications of value.

A *valuer* should choose comparable transactions within the following context:

- (a) evidence of several transactions is generally preferable to a single transaction or event,
- (b) evidence from transactions of very similar assets (ideally identical) provides a better indication of value than assets where the transaction prices require significant adjustments, transactions that happen closer to the valuation date are more representative of the market at that date than older/dated transactions, particularly in volatile markets,
- (c) for most bases of value, the transactions should be “arm’s length” between unrelated parties,
- (d) sufficient information on the transaction should be available to allow the valuer to develop a reasonable understanding of the comparable asset and assess the valuation metrics/comparable evidence, trusted source, and information on the comparable transactions should be from a reliable and between the comparable transactions and the subject asset.

Guideline publicly-traded comparable method

The guideline publicly-traded method utilises information on publicly-traded comparables that are the same or similar to the subject asset to arrive at an indication of value. This method is similar to the guideline transactions method.

However, there are several differences due to the comparables being publicly traded:

- (a) the valuation metrics/comparable evidence are available as of the valuation date,
- (b) detailed information on the comparables are readily available in public filings, and
- (c) the information contained in public filings is prepared under well-understood accounting guidelines.

The method should be used only when the subject asset is sufficiently similar to the publicly traded comparables to allow for meaningful comparison. The key steps in the guideline publicly-traded comparable method are:

- (a) identify the valuation metrics/comparable evidence that are used by participants in the relevant market,
- (b) identify the relevant guideline publicly-traded comparables and calculate the key valuation metrics for those transactions,
- (c) perform a consistent comparative analysis of qualitative and quantitative similarities and differences between the comparable assets and the subject asset,
- (d) make necessary adjustments, if any, to the valuation metrics to reflect differences between the subject asset and the comparable assets,
- (e) apply the adjusted valuation metrics to the subject asset, and
- (f) if multiple valuation metrics were used, reconcile the indications of value.

A professional should choose guideline publicly-traded comparables within the following context:

- (a) consideration of multiple publicly-traded comparables is preferred to the use of a single comparable,
- (b) evidence from very similar publicly-traded comparables provides a better indication of value than comparables that require significant adjustments, and
- (c) publicly-traded securities that are actively traded provide more meaningful evidence than thinly-traded securities.

OTHER MARKET APPROACH CONSIDERATIONS

The following paragraphs address a non-exhaustive list of certain special considerations that *may* form part of a market approach valuation.

- ❖ Anecdotal or “rule-of-thumb” valuation benchmarks are sometimes considered to be a market approach. However, value indications derived from the use of such rules *should* not be given substantial *weight* unless it can be shown that buyers and sellers place *significant* reliance on them.
- ❖ In the market approach, the fundamental basis for making adjustments is to adjust for differences between the subject *asset* and the guideline transactions or publicly-traded securities. Some of the most common adjustments made in the market approach are known as discounts and premiums.
 - Discounts for Lack of Marketability (DLOM) *should* be applied when the comparables are deemed to have superior marketability to the subject *asset*. A DLOM reflects the concept that when comparing otherwise identical *assets*, a readily marketable *asset* would have a higher value than an *asset* with a long marketing period or restrictions on the ability to sell the *asset*. For example, publicly-traded securities can be bought and sold nearly instantaneously while shares in a private company *may* require a *significant* amount of time to identify potential buyers and complete a transaction. Many bases of value allow the consideration of restrictions on marketability that are inherent in the subject *asset* but prohibit consideration of marketability restrictions that are specific to a particular owner. DLOMs *may* be quantified using any reasonable method, but are typically calculated using option pricing models, studies that compare the value of publicly-traded shares and restricted shares in the same company, or studies that compare the value of shares in a company before and after an initial public offering.

INCOME APPROACH

Under the income approach, the value of an *asset* is determined by reference to the value of income, cash flow or cost savings generated by the *asset*. The income approach *should* be applied and afforded *significant weight* under the following circumstances:

- (a) The income producing ability of the *asset* is the critical element affecting value from a *participant* perspective, and/or
- (b) Reasonable projections of the amount and timing of future income are available for the subject *asset*, but there are few, if any, relevant market comparables

Income Approach Methods

- ❖ Although there are many ways to implement the income approach, methods under the income approach are effectively based on discounting future amounts of cash flow to present value. They are variations of the Discounted Cash Flow (DCF) method and the concepts below apply in part or in full to all income approach methods.

Discounted Cash Flow (DCF) Method

Under the DCF method the forecasted cash flow is discounted back to the valuation date, resulting in a present value of the *asset*.

In some circumstances for long-lived or indefinite-lived *assets*, DCF *may* include a terminal value which represents the value of the *asset* at the end of the explicit projection period. In other circumstances, the value of an *asset* *may* be calculated solely using a terminal value with no explicit projection period. This is sometimes referred to as an income capitalisation method.

The key steps in the DCF method are:

- choose the most appropriate type of cash flow for the nature of the subject *asset* and the assignment (i.e., pre-tax or post-tax, total cash flows or cash flows to equity, real or nominal, etc),
- determine the most appropriate explicit period, if any, over which the cash flow will be forecast,
- prepare cash flow forecasts for that period,
 - ❖ determine whether a terminal value is appropriate for the subject *asset* at the end of the explicit forecast period (if any) and then determine the appropriate terminal value for the nature of the *asset*,
 - ❖ determine the appropriate discount rate, and
 - ❖ apply the discount rate to the forecasted future cash flow, including the terminal value, if any.

Gordon Growth Model / Constant Growth Model

The constant growth model assumes that the *asset* grows (or declines) at a constant rate into perpetuity.

Market Approach/Exit Value

- ❖ The market approach/exit value method can be performed in a number of ways, but the ultimate goal is to calculate the value of the *asset* at the end of the explicit cash flow forecast.
- ❖ Common ways to calculate the terminal value under this method include application of a market-evidence based capitalisation factor or a market multiple.
- ❖ When a market approach/exit value is used, *valuers should* comply with the requirements in the market approach and market approach methods section of this standard.

Salvage Value/Disposal Cost

- ❖ The terminal value of some *assets may* have little or no relationship to the preceding cash flow. Examples of such *assets* include wasting *assets* such as a mine or an oil well. In such cases, the terminal value is typically calculated as the salvage value of the *asset*, less costs to dispose of the *asset*.

Discount Rate

The rate at which the forecast cash flow is discounted *should* reflect not only the time value of money, but also the risks associated with the type of cash flow and the future operations of the *asset*.

Valuers may use any reasonable method for developing a discounts rate. While there are many methods for developing or determining the reasonableness of a discount rate, a non-exhaustive list of common methods includes:

- (a) the capital *asset* pricing model (CAPM),
- (b) the *weighted* average cost of capital (WACC),
- (c) the observed or inferred rates/yields,
- (d) the internal rate of return (IRR),
- (e) the *weighted* average return on *assets* (WARA), and
- (f) the build-up method (generally used only in the absence of market inputs).

In developing a discount rate, a *valuer should* consider:

- (a) the risk associated with the projections made in the cash flow used,
- (b) the type of *asset* being valued. For example, discount rates used in valuing debt would be different to those used when valuing real property or a business,
- (c) which it would trade, the rates implicit in transactions in the market,
- (d) the geographic location of the *asset* and/or the location of the markets in life versus a 30-year life,
- (e) the life/term of the *asset* and the consistency of inputs. For example, the risk-free rate considered would differ for an *asset* with a three-year
- (f) the type of cash flow being used , and
- (g) the bases of value being applied. For most bases of value, the discount rate *should* be developed from the perspective of a *participant*.

For Example:

The internationally accepted valuation methodologies have been adopted by ABC Co Ltd. and a choice is to be done which method is to be adopted in Income Approach for valuation of a company.

Usually under the Income Based Approach, the methods that maybe applied are Discounted Cash Flow (DCF) Method or the Price Earning Capacity Value (PECV) Method.

Under DCF approach, the future free cash flows of the business are discounted to the valuation date to arrive at the present value of the cash flows of the business or capitalized using a discount rate depending on the capital structure of the company. This approach also takes into account the value of the business in perpetuity by the calculation of terminal value using the exit multiple method or the perpetuity growth method, whichever is appropriate.

Under PECV method, the average earning on the basis of past 3-5 year are first determined, adjustments are then made for any exceptional transactions or items of non- recurring nature. The adjusted average earning are then capitalized at an appropriate rate to arrive at the value of business. The capitalization rate so factored has to be decided depending upon various factors such as the earning trend in the industries, P/E prevailing in the industries etc.

Reason for choice of methodology adopted under the Income Approach

Under PECV method of valuation the average earning of 3-5 years is adjusted for any exceptional transaction or items of non-recurring nature. After this, the normalized earning is then capitalized at an appropriate discount rate. ABC Co Ltd has commenced its commercial production in F.Y.2015-16 thus, due to the non-availability of historical earnings, PECV method was not considered suitable to value the business of ABC Co Ltd

The dynamics of the business of ABC Co Ltd is such that the operations generate incomes which are reflective of the value of its business in perpetuity .

In view of the management the projections of future cash flows are reasonably achievable, therefore, it was considered appropriate to use DCF approach to determine the fair value of the business of ABC Co Ltd under the Income Approach

COST APPROACH

The cost approach provides an indication of value using the economic principle that a buyer will pay no more for an *asset* than the cost to obtain an *asset* of equal utility, whether by purchase or by construction, unless undue time, inconvenience, risk or other factors are involved. The approach provides an indication of value by calculating the current replacement or reproduction cost of an *asset* and making deductions for physical deterioration and all other relevant forms of obsolescence.

The cost approach *should* be applied and afforded *significant weight* under the following circumstances:

- (a) *participants* would be able to recreate an *asset* with substantially the same utility as the subject asset, without regulatory or legal restrictions, and the *asset* could be recreated quickly enough that a *participant* would not be willing to pay a *significant* premium for the ability to use the subject *asset* immediately,
- (b) the *asset* is not directly income-generating and the unique nature of the *asset* makes using an income approach or market approach unfeasible, and/or
- (c) the basis of value being used is fundamentally based on replacement approach *should* be applied and afforded *significant weight*, the following cost, such as replacement value.

When using the cost approach under the following circumstances, a *valuer should* consider whether any other approaches can be applied and *weighted* to corroborate the value indication from the cost approach: in recreating the *asset*,

- (a) *participants* might consider recreating an *asset* of similar utility, but there are potential legal or regulatory hurdles or *significant* time involved
- (b) when the cost approach is being used as a reasonableness check to other approaches (for example, using the cost approach to confirm whether a business valued as a going-concern might be more valuable on a liquidation basis), and/or
- (c) the *asset* was recently created, such that there is a high degree of reliability in the assumptions used in the cost approach.

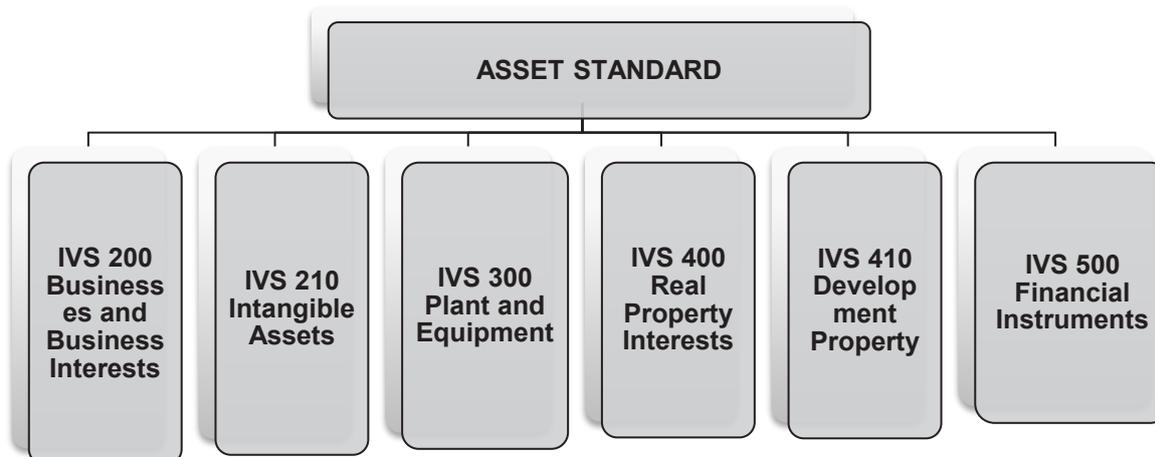
The value of a partially completed *asset* will generally reflect the costs incurred to date in the creation of the *asset* (and whether those costs contributed to value) and the expectations of *participants* regarding the value of the property when complete, but consider the costs and time required to complete the *asset* and appropriate adjustments for profit and risk.

Cost Approach Methods

- ❖ Broadly, there are three cost approach methods:
 - Replacement cost method: a method that indicates value by calculating the cost of a similar *asset* offering equivalent utility,
 - Reproduction cost method: a method under the cost that indicates value by calculating the cost to recreating a replica of an *asset*, and
 - Summation method: a method that calculates the value of an *asset* by the addition of the separate values of its component parts.

ASSET STANDARDS

The *Asset* Standards include requirements related to specific types of *assets*. These requirements *must* be followed in conjunction with the General Standards when performing a valuation of a specific *asset* type. The *Asset* Standards include certain background information on the characteristics of each *asset* type that influence value and additional *asset*-specific requirements on common valuation approaches and methods used.



IVS 200 Businesses and Business Interests

The definition of what constitutes a business *may* differ depending on the *purpose of a valuation*. However, generally a business conducts a commercial, industrial, service or investment activity. Businesses can take many forms, such as corporations, partnerships, joint ventures and sole proprietorships. The value of a business *may* differ from the sum of the values of the individual *assets* or liabilities that make up that business. When a business value is greater than the sum of the recorded and unrecorded net tangible and identifiable intangible *assets* of the business, the excess value is often referred to as going concern value or goodwill.

When valuing individual *assets* or liabilities owned by a business, *valuers should* follow the applicable standard for that type of *asset* or liability (IVS 210 Intangible Assets, IVS 400 Real Property Interests, etc).

Valuers must establish whether the valuation is of the entire entity, shares or a shareholding in the entity (whether a controlling or non-controlling interest), or a specific business activity of the entity. The type of value being provided *must* be appropriate to the *purpose of the valuation* and communicated as part of the scope of the engagement (see IVS 101 *Scope of Work*). It is especially critical to clearly define the business or business interest being valued as, even when a valuation is performed on an entire entity, there *may* be different levels at which that value could be expressed. For example:

- **Enterprise value:** Often described as the total value of the equity in a business plus the value of its debt or debt-related liabilities, minus any cash or cash equivalents available to meet those liabilities.
- **Total invested capital value:** The total amount of money currently invested in a business, regardless of the source, often reflected as the value of total *assets* less current liabilities and cash.
- **Operating Value:** The total value of the operations of the business, excluding the value of any non-operating *assets* and liabilities.
- **Equity value:** The value of a business to all of its equity shareholders.

Valuations of businesses are required for different *purposes* including acquisitions, mergers and sales of businesses, taxation, litigation, insolvency proceedings and financial reporting. Business valuations *may* also be needed as an input or step in other valuations such as the valuation of stock options, particular class(es) of stock, or debt.

IVS 210 Intangible Assets

An intangible *asset* is a non-monetary *asset* that manifests itself by its economic properties. It does not have physical substance but grants rights and/or economic benefits to its owner.

Specific intangible *assets* are defined and described by characteristics such as their ownership, function, market position and image. These characteristics differentiate intangible *assets* from one another.

There are many types of intangible *assets*, but they are often considered to fall into one or more of the following categories (or goodwill):

- **Marketing-related:** Marketing-related intangible *assets* are used primarily in the marketing or promotion of products or services. Examples include trademarks, trade names, unique trade design and internet domain names.
- **Customer-related:** Customer-related intangible *assets* include customer lists, backlog, customer contracts, and contractual and non-contractual customer relationships.
- **Artistic-related:** Artistic-related intangible *assets* arise from the right to benefits from artistic works such as plays, books, films and music, and from non-contractual copyright protection.
- **Contract-related:** Contract-related intangible *assets* represent the value of rights that arise from contractual agreements. Examples include licensing and royalty agreements, service or supply contracts, lease agreements, permits, broadcast rights, servicing contracts, employment contracts and non-competition agreements and natural resource rights.
- **Technology-based:** Technology-related intangible *assets* arise from contractual or non-contractual rights to use patented technology, unpatented technology, databases, formulae, designs, software, processes or recipes.

In valuing an intangible *asset*, *valuers must* understand different value from customer contracts (those contracts in place on the specifically what needs to be valued and the *purpose of the valuation*).

For example, customer data (names, addresses, etc) typically has a very valuation date and customer relationships (the value of the ongoing customer relationship including existing and future contracts). What intangible *assets* need to be valued and how those intangible *assets* are defined *may* differ depending on the *purpose of the valuation*, and the differences in how intangible *assets* are defined can lead to *significant* differences in value.

Generally, goodwill is any future economic benefit arising from a business, an interest in a business or from the use of a group of *assets* which has not been separately recognized in another *asset*. The value of goodwill is often represented as the excess of the price paid in a real or hypothetical typically measured as the residual amount remaining after the values of all identifiable tangible, intangible and monetary *assets*, adjusted for actual or potential liabilities, have been deducted from the value of a business. It is acquisition of a company over the value of the company's other identified *assets* and liabilities. For some *purposes*, goodwill *may* need to be further divided into transferable goodwill (that which can be transferred to third parties) and non-transferable or "personal" goodwill.

As the amount of goodwill is dependent on which other tangible and intangible *assets* are recognized, its value can be different when calculated for different *purposes*. For example, in a business combination accounted for under IFRS or US GAAP, an intangible *asset* is only recognized to the extent that it:

- (a) is separable, i.e., capable of being separated or divided from the entity and sold, transferred, licensed, rented or exchanged, either individually or together with a related contract, identifiable *asset* or liability, regardless of whether the entity intends to do so, or
- (b) arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations

While the aspects of goodwill can vary depending on the *purpose of the valuation*, goodwill frequently includes elements such as:

- (a) company-specific synergies arising from a combination of two or more businesses (eg, reductions in operating costs, economies of scale or product mix dynamics),
- (b) opportunities to expand the business into new and different markets,
- (c) the benefit of an assembled workforce (but generally not any intellectual property developed by members of that workforce),
- (d) the benefit to be derived from future *assets*, such as new customers and future technologies, and
- (e) assemblage and going concern value.

Valuers may perform direct valuations of intangible *assets* where the value of the intangible *assets* is the *purpose* of the analysis or one part of the analysis. However, when valuing businesses, business interests, real property, and machinery and equipment, *valuers should* consider whether there are intangible *assets* associated with those *assets* and whether those directly or indirectly impact the *asset* being valued.

For example, when valuing a hotel based on an income approach, the contribution to value of the hotel's brand *may* already be reflected in the profit generated by the hotel.

Intangible *asset* valuations are performed for a variety of *purposes*. It is the *valuer's* responsibility to understand the *purpose of a valuation* and whether intangible *assets should* be valued, whether separately or grouped with other *assets*. A non-exhaustive list of examples of circumstances that commonly include an intangible *asset* valuation component is provided below:

- (a) For financial reporting *purposes*, *valuations* of intangible *assets* are often required in connection with accounting for business combinations, *asset* acquisitions and sales, and impairment analysis.
- (b) For tax reporting *purposes*, intangible *asset* valuations are frequently needed for transfer pricing analyses, estate and gift tax planning and reporting, and ad valorem taxation analyses.
- (c) Intangible *assets may* be the subject of litigation, requiring valuation analysis in circumstances such as shareholder disputes, damage calculations and marital dissolutions (divorce).
- (d) Other statutory or legal events *may* require the valuation of intangible *assets such* as compulsory purchases/eminent domain proceedings.
- (e) *Valuers* are often asked to value intangible *assets* as part of general consulting, collateral lending and transactional support engagements.

IVS 300 Plant and Equipment

Items of plant and equipment (which *may* sometimes be categorized as a type of personal property) are tangible *assets* that are usually held by an entity for use in the manufacturing/production or supply of goods or services, for rental by others or for administrative *purposes* and that are expected to be used over a period of time.

For Example, For lease of machinery and equipment, the right to use an item of machinery and equipment (such as a right arising from a lease) would also follow the guidance of this standard. It *must* also be noted that the "right to use" an *asset* could have a different life span than the service life (that takes into consideration of both preventive and predictive maintenance) of the underlying machinery and equipment itself and, in such circumstances, the service life span *must* be stated.

Assets for which the highest and best use is "in use" as part of a group of *assets must* be valued using consistent assumptions. Unless the *assets* belonging to the sub-systems *may* reasonably be separated independently from its main system, then the sub-systems *may* be valued separately, having consistent assumptions within the sub-systems. This will also cascade down to sub-sub-systems and so on.

Intangible *assets* fall outside the classification of plant and equipment *assets*. However, an intangible *asset*

may have an impact on the value of plant and equipment *assets*. For example, the value of patterns and dies is often inextricably linked to associated intellectual property rights. Operating software, technical data, production records and patents are further examples of intangible *assets* that can have an impact on the value of plant and equipment *assets*, depending on whether or not they are included in the valuation. In such cases, the valuation process will involve consideration of the inclusion of intangible *assets* and their impact on the valuation of the plant and equipment *assets*. When there is an intangible *asset* component, the *valuer should* also follow IVS 210 Intangible *Assets*.

A valuation of plant and equipment will normally require consideration of a range of factors relating to the *asset* itself, its environment and physical, functional and economic potential. Therefore, all plant and equipment *valuers should* normally inspect the subject *assets* to ascertain the condition of the plant and also to determine if the information provided to them is usable and related to the subject *assets* being valued.

Factors that *may* need to be considered under each of these headings include the following:

(a) *Asset-related:*

1. the *asset's* technical specification,
2. the remaining useful, economic or effective life, considering both preventive and predictive maintenance,
3. if the *asset* is not valued in its current location, the costs of
4. the *asset's* condition, including maintenance history,
5. any functional, physical and technological obsolescence, decommissioning and removal, and any costs associated with the *asset's* existing in-place location, such as installation and re-commissioning of *assets* to its optimum status,
6. for machinery and equipment that are used for rental *purposes*, the lease renewal options and other end-of-lease possibilities,
7. any potential loss of a complementary *asset*, e.g., the operational life of a machine *may* be curtailed by the length of lease on the building in which it is located,
8. additional costs associated with additional equipment, transport, installation and commissioning, etc, and
9. in cases where the historical costs are not available for the machinery and equipment that *may* reside within a plant during a construction, the *valuer may* take references from the Engineering, Procurement, Construction ("EPC") contract.

(b) *Environment-related:*

1. the location in relation to the source of raw material and market for the product. The suitability of a location *may* also have a limited life, eg, where raw materials are finite or where demand is transitory,
2. the impact of any environmental or other legislation that either restricts utilisation or imposes additional operating or decommissioning costs,
3. radioactive substances that *may* be in certain machinery and equipment have a severe impact if not used or disposed of *International Valuation Standards* appropriately. This will have a major impact on expense consideration and the environment,
4. toxic wastes which *may* be chemical in the form of a solid, liquid or gaseous state *must* be professionally stored or disposed of. This is critical for all industrial manufacturing, and
5. licences to operate certain machines in certain countries *may* be restricted.

(c) Economic-related:

1. the actual or potential profitability of the *asset* based on comparison of operating costs with earnings or potential earnings (see IVS 200 Business and Business Interests),
2. the demand for the product manufactured by the plant with regard to both macro and micro economic factors could impact on demand, and
3. the potential for the *asset* to be put to a more valuable use than the current use (i.e., highest and best use).

Valuations of plant and equipment *should* reflect the impact of all forms of obsolescence on value.

To comply with the requirement to identify the *asset* or liability to be valued in IVS 101 *Scope of Work*, to the extent it impacts on value, consideration *must* be given to the degree to which the *asset* is attached to, or integrated with, other *assets*. For example:

- (a) *assets may* be permanently attached to the land and could not be removed without substantial demolition of either the *asset* or any surrounding structure or building,
- (b) an individual machine *may* be part of an integrated production line where its functionality is dependent upon other *assets*,
- (c) an *asset may* be considered to be classified as a component of the (HVAC). Real property eg, a Heating, Ventilation and Air Conditioning System. In such cases, it will be necessary to clearly define what is to be included or excluded from the valuation. Any special assumptions relating to the availability of any complementary *assets must* also be stated.

Plant and equipment connected with the supply or provision of services to a building are often integrated within the building and, once installed, are not separable from it. These items will normally form part of the real property interest. Examples include plant and equipment with the primary function of supplying electricity, gas, heating, cooling or ventilation to a building and equipment such as elevators. If the *purpose of the valuation* requires these items to be valued separately, the scope of work *must* include a statement to the effect that the value of these items would normally be included in the real property interest and *may* not be separately realisable. When different valuation assignments are undertaken to carry out valuations of the real property interest and plant and equipment *assets* at the same location, care is necessary to avoid either omissions or double counting.

Valuations of plant and equipment are often required for different *purposes* including financial reporting, leasing, secured lending, disposal, taxation, litigation and insolvency proceedings.

IVS 400 Real Property Interests

- ❖ Property interests are normally defined by state or the law of individual *jurisdictions* and are often regulated by national or local legislation. Before undertaking a valuation of a real property interest, a *valuer must* understand the relevant legal framework that affects the interest being valued.
- ❖ A real property interest is a right of ownership, control, use or occupation of land and buildings. There are three main types of interest:
 - the superior interest in any defined area of land. The owner of this interest has an absolute right of possession and control of the land and any buildings upon it in perpetuity, subject only to any subordinate interests and any statutory or other legally enforceable constraints,
 - a subordinate interest that normally gives the holder rights of exclusive possession and control of a defined area of land or buildings for a defined period, eg, under the terms of a lease contract, and/or

- a right to use land or buildings but without a right of exclusive possession or control, eg, a right to pass over land or to use it only for a specified activity.
- ❖ Intangible assets fall outside the classification of real property assets. However, an intangible asset *may* be associated with, and have a material impact on, the value of real property assets. It is therefore essential to be clear in the scope of work precisely what the valuation assignment is to include or exclude. For example, the valuation of a hotel can be inextricably linked to the hotel brand. In such cases, the valuation process will involve consideration of the inclusion of intangible assets and their impact on the valuation of the real property and plant and equipment assets. When there is an intangible asset component, the *valuer should* also follow IVS 210 Intangible Assets.

To comply with the requirement to identify the *asset* to be valued in IVS 101 *Scope of Work*, the following matters *must* be included:

- (a) a description of the real property interest to be valued, and
- (b) identification of any superior or subordinate interests that affect the interest to be valued.

For Examples, Valuations of real property interests for different *purposes* including secured lending, sales and purchases, taxation, litigation, compensation, insolvency proceedings and financial reporting.

IVS 410 Development Property

- ❖ In the context of this standard, development properties are defined as interests where redevelopment is required to achieve the highest and best use, or where improvements are either being contemplated or are in progress at the valuation date and include:
 - the construction of buildings,
 - previously undeveloped land which is being provided with infrastructure,
 - the redevelopment of previously developed land,
 - the improvement or alteration of existing buildings or structures,
 - land allocated for development in a statutory plan, and
 - land allocated for a higher value uses or higher density in a statutory plan.
- ❖ Valuations of development property *may* be required for different *purposes*. It is the *valuer's* responsibility to understand the *purpose* of a valuation. A non-exhaustive list of examples of circumstances that *may* require a development valuation is provided below:
 - (a) when establishing whether proposed projects are financially feasible,
 - (b) as part of general consulting and transactional support engagements for acquisition and loan security,
 - (c) for tax reporting *purposes*, development valuations are frequently needed for ad valorem taxation analyses,
 - (d) for litigation requiring valuation analysis in circumstances such as shareholder disputes and damage calculations,
 - (e) for financial reporting *purposes*, valuation of a development property is often required in connection with accounting for business combinations, *asset* acquisitions and sales, and impairment analysis, and
 - (f) for other statutory or legal events that *may* require the valuation of development property such as compulsory purchases.

When valuing development property, *valuers must* follow the applicable standard for that type of *asset* or liability

The residual value or land value of a development property can be very revenue to be derived from the completed project or any of the development costs that will be incurred. This remains the case regardless of the method or methods used or however diligently the various inputs are researched in relation to the valuation date.

This sensitivity also applies to the impact of *significant* changes in either the costs of the project or the value on completion of the current value. If the valuation is required for a *purpose* where *significant* changes in value over the duration of a construction project *may* be of concern to the user (e.g., where the valuation is for loan security or to establish a project's viability), the *valuer must* highlight the potentially disproportionate effect of possible changes in either the construction costs or end value on the profitability of the project and the value of the partially completed property. A sensitivity analysis *may* be useful for this *purpose* provided it is accompanied by a suitable explanation.

CASE STUDY

On May, 2018 The World's Built Environment Forum London Summit was organized with the purpose to brought together respected panelist at one forum and discuss the major issues faced.

Khoo Teng Chye, Executive Director, Centre for Liveable Cities (Ministry of National Development, Government of Singapore), highlighted that cities should find out the solutions of cities on their own. He focuses on the major issue that how Singapore managed to triple its population density and improving its liveability.

The island city-state is particularly challenged when it comes to resources, as he explains: "Take water for example, we get plenty of rain but we have no space to store it.

Singapore was already trying with the idea of recycling water as early as the 1970s. However, the first experiment failed and the pilot treatment plant closed down after only a year due to high costs and technology issues. It was not until much later, in 1998, that the Singapore Water Reclamation Study successfully determined the suitability of reclaimed supplies as a source of raw water.

He clearly identifies, that the problem of attaining water sufficiently is still prevailing which creates a hurdle in the development and effects the valuation of water plants.

To increase the liveability of the city, Khoo says we shouldn't think about urban spaces and natural spaces as independent of each other. "Even as we built more, we increased the green areas and areas of water in the city. We have managed to attract nature back into the city, such as birds and otters."

Urbanisation is one of the common characteristics of economic development. With the gradual growth of the economy, the process of urbanisation depends on the shift of surplus population from rural to urban areas along-with the growth of some industrialised urban centres.

Rapid urbanization is another key concern area which will help in improving the valuation of the companies and lead to infrastructural development. He gives the example of, "Vivek Nanda, CEO at Hinduja Investment & Project Services and Board Member of UK India Business Council, says that the interesting thing about India is that its infrastructure.

"Some countries find it difficult to get ahead because they don't have the domestic resources to finance it. Others, like China, have massive national savings rate and have managed it."

Ques 1 How can we continue to urbanise with such a scarcity of resources.

Ques 2 How can we manage rapid development?

Ques 3 What role valuation plays in such type of situation?

Ques 4 How can the scarcity of water can be solved in Country like Singapore?

IVS 500 FINANCIAL INSTRUMENTS

A financial instrument is a contract that creates rights or obligations between specified parties to receive or pay cash or other financial consideration. Such instruments include but are not limited to, derivatives or other contingent instruments, hybrid instruments, fixed income, structured products and equity instruments. A financial instrument can also be created through the combination of other financial instruments in a portfolio to achieve a specific net financial outcome.

Valuations of financial instruments conducted under IVS 500 *Financial Instruments* can be performed for many different *purposes* including, but not limited to:

- (a) acquisitions, mergers and sales of businesses or parts of businesses,
- (b) purchase and sale,
- (c) financial reporting,
- (d) legal or regulatory requirements (subject to any specific requirements set by the relevant authority),
- (e) internal risk and compliance procedures,
- (f) tax, and
- (g) litigation.

A thorough understanding of the instrument being valued is required to identify and evaluate the relevant market information available for identical or comparable instruments. Such information includes prices from recent transactions in the same or a similar instrument, quotes from brokers or pricing services, credit ratings, yields, volatility, indices or any other inputs relevant to the valuation process.

To comply with the requirement to identify the *asset* or liability to be valued as in IVS 101 *Scope of Work*, the following matters *must* be addressed:

- (a) the class or classes of instrument to be valued,
- (b) whether the valuation is to be of individual instruments or a portfolio, and investigations required to support the valuation *must* be adequate having
- (c) the unit of account.

IVS 102 Investigations and Compliance, provide that the regard to the *purpose* of the assignment. To support these investigations, sufficient evidence supplied by the *valuer* and/or a credible and reliable third party *must* be assembled. To comply with these requirements, the following are to be considered:

- (a) All market data used or considered as an input into the valuation process *must* be understood and, as necessary, validated.
- (b) Any model used to estimate the value of a financial instrument shall be selected to appropriately capture the contractual terms and economics of the financial instrument.
- (c) Where observable prices of, or market inputs from, similar financial instruments are available, those imputed inputs from comparable price(s) and/or observable inputs *should* be adjusted to reflect the contractual and economic terms of the financial instrument being valued.
- (d) Where possible, multiple valuation approaches are preferred. If differences in value occur between the valuation approaches, the *valuer must* explain and document the differences in value.

To comply with the requirement to disclose the valuation approach(es) and reasoning in IVS 103 Reporting, consideration *must* be given to the appropriate degree of reporting detail. The requirement to disclose this information in the valuation report will differ for different categories of financial instruments. Sufficient information

should be provided to allow users to understand the nature of each class of instrument valued and the primary factors influencing the values. Information that adds little to a users' understanding as to the nature of the *asset* or liability, or that obscures the primary factors influencing value, *must* be avoided. In determining the level of disclosure that is appropriate, regard *must* be had to the following:

- (a) **Materiality:** The value of an instrument or class of instruments in relation to the total value of the holding entity's *assets* and liabilities or the portfolio that is valued.
- (b) **Uncertainty:** The value of the instrument *may* be subject to *significant* uncertainty on the valuation date due to the nature of the instrument, the model or inputs used or to market abnormalities. Disclosure of the cause and nature of any material uncertainty *should* be made.
- (c) **Complexity:** The greater the complexity of the instrument, the greater the appropriate level of detail to ensure that the assumptions and inputs affecting value are identified and explained.
- (d) **Comparability:** The instruments that are of particular interest to users *may* differ with the passage of time. The usefulness of the valuation report, or any other reference to the valuation, is enhanced if it reflects the information demands of users as market conditions change, although, to be meaningful, the information presented *should* allow comparison with previous periods.
- (e) **Underlying instruments:** If the cash flows of a financial instrument are generated from or secured by identifiable underlying *assets* or liabilities, the relevant factors that influence the underlying value *must* be provided in order to help users understand how the underlying value impacts the estimated value of the financial instrument.

For example, If a company appoint an Expert Group to advise on the issues that had led to a loss of confidence by investors and regulators in the valuation of many types of instrument. This Expert Group has had input into the development of a high level standard in the IVS 500 Financial Instrument which relates the general principles of transparency and disclosure to the valuation of financial instruments, identifies the major value affecting characteristics of different instruments and the principal valuation methods used. The Group also had a major input into the uncertainty discussion paper. Projects that will eventually lead to technical guidance on identifying and valuing liquidity premia and credit valuation adjustments are under development.

CASE STUDY

Yes Bank confident of Fortis fetching good valuation

Fortis Healthcare, is one of the best hospital in India, which provide all kinds of medical treatment and surgeries by experience surgeons at affordable price. Yes Bank is the single largest shareholder of this hospital. Yes Bank today exuded confidence of a sound resolution with a good valuation and thus help drive out of the management crisis plaguing one of the largest corporate hospital chains in the county.

In February 2018, Yes Bank, which was the largest lender to the hospital, had acquired a 17.31 per cent stake by invoking nearly 9 crore pledged share .Later in mid-March, it sold 2.17 per cent of this bringing down its shareholding to 15.14 per cent as of March 2018.

Still this makes the city-based private lender the single largest shareholder in the New Delhi headquartered corporate hospital chain.

Yes Bank has acquired 8,97,81,906 equity shares having nominal value of Rs 10 per share of the company pursuant to invocation of pledge on the said equity shares subsequent to default by promoter group companies in the credit facility provided by the bank Yes Bank faces problem in the valuation of the Fortis Health Care , as it the performing asset for Yes Bank. Does the Yes bank able to resolve the problem.

They were not focusing on the quality of the bidders as Fortis is a prime healthcare assets in the country which is a major concern area.

Bank as a major shareholder was not active in the valuation process of the Fortis Hospital chain but only good in transparency which may lead to improvement .

Improper Bidding will be effecting the small and big investors and impact the valuation of a company.

Ques 1 Does YES Bank fetch good valuation to Fortis Health Care.

Ques 2 What IVS does YES bank follow for valuation process.

Ques 3 What impact the transparency and full disclosure plays in valuation of a company.

Indian Valuation Standards (IVSs) issued by ICAI

Valuation Standards Board of ICAI has issued 'Indian Valuation Standards (IVS 101, 102, 103, 201, 202, 301, 302, 303)'. These standards sets out the concepts, principles, practices and procedures to ensure uniformity in approach and quality of valuation output.

Valuation field is gaining importance now and is considered as one of the most critical areas in finance and it plays a key role in many areas of finance such as buy/ sell, solvency, merger and acquisition. It also plays an important role in the Insolvency Resolution regime where Liquidation value has to be ascertained by Resolution professional through the Registered Valuers.

Looking at the importance, The Institute of Chartered Accountants of India has constituted Valuation Standards Board in the year 2017-18. The Valuation Standards Board has been constituted to focus on the release of Indian Valuation Standards, providing Interpretations, Guidance and Technical Materials from time to time and implementation of the Standards.

To meet the above objective and to standardise the various principles, practices and procedures followed by registered valuers/ valuation professionals in valuation of assets and liabilities, Valuation Standards Board of the Institute of Chartered Accountants of India has formulated the Indian Valuation Standards.

The Valuation Standards sets out concepts, principles, practices and procedures which are generally accepted internationally having regard to prevailing legal framework, procedures and practices in India. Also, the Standards will provide a benchmark to the professionals to ensure uniformity in approach and quality of valuation output.

Recognising the need to have the consistent, uniform and transparent valuation policies and harmonise the diverse practices in use in India, the Council of the Institute of Chartered Accountants of India (ICAI) at its 375th meeting has issued the Valuation Standards which are 1st of its kind in India.

With a vision to promote best practices in this niche area of practice, the Standards lay down a framework for the chartered accountants to ensure uniformity in approach and quality of valuation output. The following Valuation Standards have been issued by ICAI:

1. Preface to the Indian Valuation Standards
2. Framework for the Preparation of Valuation Report in accordance with the Indian Valuation Standards
3. Indian Valuation Standard 101- Definitions
4. Indian Valuation Standard 102- Valuation Bases
5. Indian Valuation Standard 103 – Valuation Approaches and Methods
6. Indian Valuation Standard 201 – Scope of Work, Analyses and Evaluation
7. Indian Valuation Standard 202 – Reporting and Documentation
8. Indian Valuation Standard 301 – Business Valuation

9. Indian Valuation Standard 302 – Intangible Assets
10. Indian Valuation Standard 303 – Financial Instruments

The Valuation Standards have been issued by the Institute of Chartered Accountants of India to set up concepts, principles and procedures which are generally accepted internationally having regard to legal framework and practices prevalent in India.

Applicability of Indian Valuation Standards

These Indian Valuation Standards will be applicable for all valuation engagements on mandatory basis under the Companies Act 2013. In respect of Valuation engagements under other Statutes like Income Tax, SEBI, FEMA etc, it will be on recommendatory basis for the members of the Institute. These Valuation Standards are effective for the valuation reports issued on or after 1st July, 2018.

In formulating the Valuation Standards, ICAI considered best valuation practices followed globally as well as in India, uniqueness of Indian conditions, current practices in India alongwith their advantages and disadvantages and various purposes for which valuations might be required over and above the requirements of Companies Act.

These standards come as ICAI's consistent drive to guide its members for ensuring high quality work and standards.

SUMMARY

- The International Valuation Standards (IVS) are standards for undertaking valuation assignments using generally recognized concepts and principles that promote transparency and consistency in valuation practice.
- The International Valuation Standards Council (IVSC) is an independent, not-for-profit organization committed to advancing quality in the valuation profession.
- The objective of the IVS is to increase the confidence and trust of users of valuation services by establishing transparent and consistent valuation practices.
- The IVS consist of mandatory requirements that *must* be followed in order to state that a valuation was performed in compliance with the IVS.
- IVS are arranged in three main categories as IVS Framework, IVS General Standard & IVS Asset Standard.
- The IVS Framework consists of general principles for valuers following the IVS regarding objectivity, judgment, competence and acceptable departures from the IVS.
- *Valuer* has been defined as “an individual, group of individuals, or a firm possessing the necessary qualifications, ability and experience to undertake a valuation in an objective, unbiased and competent manner.
- A “*departure*” is a circumstance where specific legislative, regulatory or other authoritative requirements *must* be followed that differs from some of the requirements within IVS.
- IVS General Standard are set forth requirements for the conduct of all valuation assignments including establishing the terms of a valuation engagement, bases of value, valuation approaches and methods, and reporting.
- All valuation advice and the work undertaken in its preparation *must* be appropriate for the intended *purpose*.

- Valuation date: The valuation date *must* be stated. If the valuation date is different from the date on which the valuation report is issued or the date on which investigations are to be undertaken or completed then where appropriate, these dates *should* be clearly distinguished.
- Investigations made during the course of a valuation assignment *must* be appropriate for the *purpose of the valuation* assignment and the basis(es) of value.
- A valuation record *must* be kept of the work performed during the valuation process and the basis for the work on which the conclusions were reached for a reasonable period after completion of the assignment, having regard to any relevant statutory, legal or regulatory requirements.
- The *Asset Standards* include requirements related to specific types of *assets which must* be followed in conjunction with the *General Standards* when performing a valuation of a specific *asset* type.
- The *Asset Standards* include certain background information on the characteristics of each *asset* type that influence value and additional *asset-specific* requirements on common valuation approaches and methods used.
- An intangible *asset* is a non-monetary *asset* that manifests itself by its economic properties. It does not have physical substance but grants rights and/or economic benefits to its owner.
- A valuation of plant and equipment will normally require consideration of a range of factors relating to the *asset* itself, its environment and physical, functional and economic potential.
- Valuations of real property interests are often required for different *purposes* including secured lending, sales and purchases, taxation, litigation, compensation, insolvency proceedings and financial reporting.
- When valuing development property, *valuers must* follow the applicable standard for that type of *asset* or liability
- A financial instrument can also be created through the combination of other financial instruments in a portfolio to achieve a specific net financial outcome.

SELF TEST QUESTIONS

- Ques 1 Explain the concept of IVS and which committee constitute these standards?
- Ques 2 Explain the IVS Framework in detail.
- Ques 3 IVS General Standard plays a vital role in the valuation of a company. Explain in detail.
- Ques 4 Explain in detail the IVS Asset Standard under these categories
- a) IVS 200 Businesses and Business Interests
 - b) IVS 210 Intangible Assets
 - c) IVS 300 Plant and Equipment
 - d) IVS 400 Real Property Interests
 - e) IVS 410 Development Property
 - f) IVS 500 Financial Instruments
- Ques 5 Explain in detail IVS 105 Valuation Approaches And Methods
- Ques 6 Investigations made during the course of a valuation assignment must be appropriate for the purpose of the valuation assignment and the basis(es) of value. Discuss.

Ques 7 What are the Indian Valuation Standards issued by ICAI.

Ques 8 What is the comparative study between the International Valuation Standard and Indian Valuation Standards.

LIST OF FURTHER READINGS

- 1) International Valuation Standards: A Guide to the Valuation of Real Property Assets by David Parker, Published by Wiley-Blackwell.
- 2) Valuation by Registered Valuers under Companies Act, 2013 & Insolvency & Bankruptcy Code, 2016 by CA Kamal Garg, Published by Bharat Law House Pvt. Ltd.
- 3) Principles and Practice of Valuation by D.N.Banerjee, Published by ELH, Calcutta
- 4) Business Valuations in India- Beyond the numbers by Corporate Professionals, Published by CCH.
- 5) Valuation measuring value of Companies by Mc Kinsey & Co., Published by John Wiley & Sons.

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Lesson 4

Valuation Guidance Resources in India

LESSON OUTLINE

- Introduction
- Guidance for Valuation of Public Sector Undertakings
- Valuation Methods for Indian Market
 - Start-ups
 - Real Estate
- Indian Valuation Standards
 - Definitions
 - Valuation Bases
 - Valuation Approaches and Methods
 - Scope of Work, Analyses and Evaluation
 - Reporting and Documentation
 - Business Valuation
 - Intangible Assets
 - Financial Instruments
- SUMMARY
- SELF TEST QUESTIONS

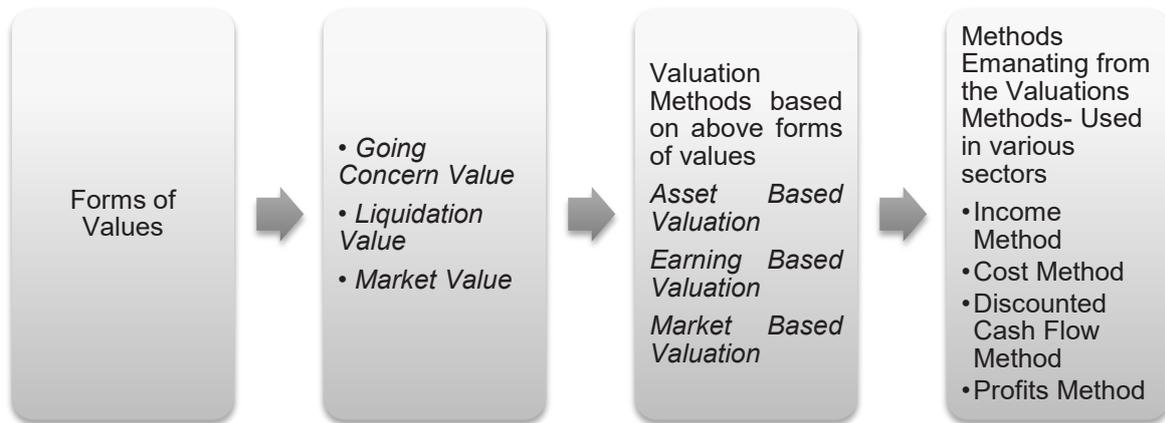
LEARNING OBJECTIVES

Valuation activities have become pervasive in various sectors of India. The valuation gained substantial significance during disinvestment process of public sector enterprises in India. Even in private sector also, there have been a significant hike in valuation related issues. This lesson focuses upon the methods generally used in India for valuation, valuation guidelines for public sector enterprises issued at the time of disinvestment process, valuation methods used in Start-ups and Real estate sectors. Further, this lesson also aim to make the reader conversant with the Indian Valuation Standards.

ORIENTATION

This study lesson requires Working Knowledge on various forms of value, valuation approach of public sector undertakings, prevalent methods of valuation in Indian market and Indian Valuation Standards. A reasonable understanding on the various types of values- Going concern, Liquidation, Market etc., various methods of valuation referred in Indian scenario and Indian Valuation Standards will suffice the knowledge requirements of the students.

FAMILY TREE OF CONCEPTS



INTRODUCTION

For any business, accurate business valuation forms the foundation of good funding and creditability. However, it is to be noted that valuation of listed companies is quite convenient than the non-listed entities as the former has a quoted share price. Generally, the valuation of a business can be conducted by using the following three different values:

1. *Going Concern Value*: This value concentrates on the earning potential of business entity. It presumes that the business is a perpetual entity which is distinct from that of its promoters and will not be affected by such external events.
2. *Liquidation Value*: This value represents the amount received on selling off all the assets and settling liabilities. Some important assets in such method which should be calculated appropriately are intangible assets such as goodwill, brand value, etc. This method helps set a benchmark below which the business should not be valued, as the same will not yield any gain for shareholders.
3. *Market Value*: This pertains to listed companies. It is the price at which the company is trading at a recognized stock exchange. An essential thing to understand under this approach is that the 'price' of security trading on stock exchange cannot provide the complete picture of its fundamentals and their potential. This price generally represents more of markets sentiment and not actual sale of a business.

Elucidating on the above mentioned approaches, the three different methods to business valuation are explained below. Either or a combination of the following methods are followed based on the purpose or objective of valuation- sale or purchase of business, merger, acquisitions, IPO, funding, financial reporting etc.

- i) *Asset Based Valuation*: In this method, the value of a business is computed based on the book value of its net assets. It is a preferable valuation method for investment or real-estate companies or where

the business is required to be re-invented or re-structured by a company. Fair market value of assets is reached to get enterprise value. To obtain fair value, adjustments for inventory undervaluation, patents, goodwill, bad debts, etc. have to be made to the book value.

- ii) **Earning Based Valuation:** Business value under this approach is based on the present value of future cash flows of one's business. Future earnings of the business are forecasted by making adjustments for extraordinary items like seasonal fluctuations. The key component all investors look after is earnings.

Before investing in a company they want to ascertain how much profit the company is earning. Future earnings are a key factor as the prospects of the company's business and potential growth opportunities are determinants of its stock price. Factors deciding earnings of the company are- sales, costs, assets and liabilities. The common valuation method used under this valuation is Discounted Cash Flow Method.

- iii) **Market Based Valuation:** Market valuation or Relative equity valuation models estimate stock's value relative to another stock and relies on the use of multiples. A multiple is a ratio between two financial variables. In majority of the cases, the numerator of the multiple is either the company's market price (in the case of price multiples) or its enterprise value (in the case of enterprise value multiples).

After having a quick recap of the methods which act as a guidance for valuation in Indian scenario, it is imperative to comprehend the difference in the value of listed and unlisted companies in India. As the valuation of the listed & quoted company has to be done on a different basis as compared to the unlisted company. The real value of assets may or may not reflect the market price of the shares; though in unlisted companies, only such information relating to the profitability of the company as reflected in the accounts is available & there is no indication of the market price. Using existing public companies as a benchmark to value similar private companies is viable valuation methodology.

Requirement of valuation in India under different laws

Fresh Issue of Shares	<ul style="list-style-type: none"> ● Reserve Bank of India- FDI ● Reserve Bank of India- ODI ● Income Tax Law ● Company Law ● SEBI Law
Transfer of Shares	<ul style="list-style-type: none"> ● Reserve Bank of India- FDI ● Reserve Bank of India- ODI ● Income Tax Law
Business Combination / Scheme of Arrangement	<ul style="list-style-type: none"> ● Company Law ● SEBI Law ● Financial Reporting
ESOP / Sweat Equity	<ul style="list-style-type: none"> ● Income Tax Law ● Company Law ● Financial Reporting

GUIDANCE FOR VALUATION OF PUBLIC SECTOR UNDERTAKINGS

Before proceeding to guidance for valuation of public sector undertakings, it is imperative to comprehend the regulatory valuation requirements in India in past decades, as it elucidate the metamorphosis of valuation requirements.

Regulatory Valuation Requirements in India in Past Decades

Year	Law	Valuation Requirement	Valuation Method
2007	Income Tax	Tax on Employee Stock Options in the form of fringe benefit tax. It later got modified to Perquisites Tax in 2009 Valuation by SEBI Registered Merchant Banker	Not Prescribed
2008	SEBI	SEBI amended the listing agreement, making it mandatory for listed companies involved in Scheme of arrangement to obtain a fairness opinion on valuation report of valuer from a SEBI Registered Merchant Banker	Not Prescribed
2009	Income Tax	Introduced tax on receipt (Transfer) of shares if transacted at a lower valuation	Break-up value method
2012	RBI (FDI)	However, the first mention of one of the most prominent valuation methodologies globally, namely, Discounted Free Cash Flow (DFCF) method was made by the RBI to determine the minimum amount of shares.	Discounted Free Cash Flow (DCF) method
2012	Income Tax	Introduced tax on Issue of shares if transacted at more than the valuation.	Discounted Cash Flow (DCF) method
2014	RBI (FDI)	FDI pricing norms got changed to internationally accepted pricing guidelines as DCF was not considered appropriate in all the situations and for all the companies.	Internationally accepted pricing guidelines
April 2016	Ind AS	Ind AS 113, Fair Value Standard is in line with IFRS 13 and ASC 820 (US GAAP).	Income Approach Asset Approach Market Approach

Oct 2016	SEBI	SEBI empanelled valuers for determination of exit price to public shareholders of exclusively listed companies.	Not Prescribed
April 2017	Income Tax	The basis of valuation for receipt (Transfer) of shares under Income Tax has been changed from Book Value based Net Assets Value considering fair value of immovable property, shares and securities, jewellery and artistic works.	Net Asset Value (Fair basis)
Dec 2016	IBC	Requirement of Liquidation Value of Assets came in Insolvency and Bankruptcy Board of India (Insolvency Resolution Process for Corporate Persons) Regulations, 2016. Later on requirement of Fair Value of Assets added.	Liquidation Value / Fair Value No guidance on manner of computation
Oct 2017	Companies (Registered Valuers and Valuation) Rules, 2017	Rules notified to govern the practice of valuation in India. Valuation under Companies Act, 2013 and IBC covered.	Valuation Standards under process

Source: *Corporate Professionals, New Delhi*

In any sale process, the sale will materialize only when the seller is satisfied that the price given by the buyer is not less than the value of the object being sold. Determination of that threshold amount, which the seller considers adequate, therefore, is the first pre-requisite for conducting any sale. This threshold amount is called the Reserve Price. Thus Reserve Price is the threshold amount below which the seller generally perceives any offer or bid inadequate. Reserve Price in case of sale of a company is determined by carrying out valuation of the company. In companies which are listed on the Stock Exchanges, market price of the shares serves as a good benchmark for assessing the fair value of the company, though the market price is usually characterized with significant short-term variance due to investor sentiments being influenced by short-term events and environmental aspects. More importantly, most of the PSUs are either not listed on the Stock Exchanges or command extremely limited traded float. They are, therefore, not correctly valued. Thus, deciding the worth of a PSU is indeed a challenging task.

Another point worth mentioning is that valuation of a PSU is different from establishing the price for which it can be sold. Experts are of the opinion that valuation must be differentiated from price. While the fair value of an asset is based on the assessment of intrinsic value accruing from fundamentals on a stand-alone basis, varying return expectation and underlying strategic aspects for different bidders could influence the price. A purchase and sale would be possible only when two parties while forming different views as to the value of an asset, are eventually able to reach agreement on the same price. It would be better appreciated by recognition of the fact that Government can only realise what a buyer is willing to pay for the PSU, as the purchase price ultimately agreed reflects its value to the buyer.

Another notable point is that valuation is a subjective figure arrived at by the bidder by leveraging his strengths with the potential of the company. Depending on the level of business synergy with the target company, perception of specific value realization and varying assessment regarding productivity, capex, etc., this figure may vary from bidder to bidder.

With reference to valuation of PSUs (Public Sector Undertakings), it is worth to refer the guidelines on valuation pertaining to all disinvestment transactions in the CPSUs (Central Public Sector Undertakings) as prescribed at Chapter 18 of the manual titled "Disinvestment: Policy & Procedures", published by the Ministry of Disinvestment in 2001. In its 30th Report presented to the Lok Sabha/ Rajya Sabha on 23.4.2002, the Standing Committee on Finance (13th Lok Sabha), inter alia, recommended that the Government should "improve and modify the guidelines for evaluation of the assets of the PSUs under consideration for disinvestment which would take value of the land invariably into consideration".

Keeping in view the valuation constraints of public sector enterprises, the Commission realized that the valuation of equity of a firm gains importance in case of disinvestment of companies which are not listed or in cases where capital markets may not fully reflect the intrinsic worth of a share disinvested earlier.

Disinvestment Commission, in its Discussion Paper while emphasizing that valuation should be independent, transparent and free from bias, has discussed three methods of valuation:

- (i) The 'Discounted cash flow' (DCF) approach relates the value of an asset to the present value of expected future cash flows of the asset.
- (ii) The 'Relative valuation' approach is used to estimate the value of an asset by looking at the pricing of comparable assets relative to a common variable like earnings, cash flows, book value or sales.
- (iii) The 'Net asset value' approach provides another basis for valuation.

Regarding the application of Valuation Methods, Disinvestment Commission felt that the use of a particular method of valuation will depend on the health of the company being evaluated, the nature of industry in which it operates and the company's intrinsic strengths. The depth of capital markets will also have an impact on the valuation. For example, in the United Kingdom, the London Stock Exchange has helped in creating markets by enabling credible price discovery for the shares of privatized companies listed on the exchange. Although valuation methods will indicate a range of valuations, Disinvestment Commission felt that some discounts might need to be applied for arriving at the final value depending on the liquidity of the stock and the extent of disinvestment:

- a) 'Lack of marketability' discount takes into account the degree of marketability (or the lack of it) of the stocks being valued. This is applicable especially to cases, which had been disinvested earlier and have been referred for disinvestment again. Discount on this consideration stems from the fact that an investor will probably pay more for a liquid stock than for a less liquid one. However, the concern of an overhang of supply may adversely affect valuation even for liquid stocks.
- b) Disinvestment Commission felt that the extent of disinvestment in core, non-strategic & non-core PSUs would have a bearing on the valuation process. The transfer of a controlling block may help to reduce the discount that has to be applied, as the prospective investor would be willing to pay a certain 'control premium' towards enhanced management participation, board control and majority shareholder rights.
- c) If all the businesses of a PSU are not equally profitable, it may be necessary to restructure the business before disinvestment. However, if this is not possible, a minority discount may have to be applied.

Disinvestment Commission also sought to correct some erroneous perceptions about valuation. There is a general perception that since valuation models are quantitative, valuation is objective. The Commission felt that though it is true that valuation does make use of quantitative models, the assumptions made as inputs to

the model leave plenty of room for subjective judgments. At the same time, there may be no such thing as a precise estimate of a value. Even at the end of the most careful and detailed valuation of a company, there could be uncertainty about the final numbers, as they are shaped by assumptions about the future of the company's operations.

Another wrong perception sought to be corrected by the Commission was the relationship attributed between valuation and market price. The benchmark for most valuations remains the market price (either its own price, if it is listed or that of a comparable company). When the value from a valuation analysis is significantly different from the market price, the two possibilities are that either one of the valuations could be incorrect. The Commission felt that the valuation done before listing takes into account anticipated factors, whereas market price reflects realized events that are influenced by unanticipated factors. However, a specific valuation itself may not be valid over a period of time. It is a function of the competitive position of the company, the nature of market in which it operates and Government policies. Therefore, it may be appropriate to update or revise valuations.

In cases where strategic sale is done with transfer of management control, the Commission felt that asset valuation should also be done. The views of the Commission in this regard are as follows:

“Strategic sale implies sale of a substantial block of Government holdings to a single party which would not only acquire substantial equity holdings of upto 50% but also bring in the necessary technology for making the PSU viable and competitive in the global market. It should be noted that the valuation of the share would depend on the extent of disinvestment and the nature of shareholder interest in the management of the company. Where Government continues to hold 51% or more of the share holding, the valuation will relate mainly to the shares of the companies and not to the assets of the company. On the other hand, where shares are sold through strategic sale and management is transferred to the strategic partner, the valuation of the enterprise would be different, as the strategic partner will have control of the management. In such cases, the valuation of land and other physical assets should also be computed at current market values in order to fix the reserve price for the strategic sale

To get best value through strategic sales, it would be necessary to have a transparent and competitive procedure and encourage enough competition among viable parties.

It is to be noted that making a valuation requires an examination of several aspects of a company's activities, such as analysing its historical performance, analysing its competitive positioning in the industry, analysing inherent strengths/weaknesses of the business and the opportunities/threats presented by the environment, forecasting operating performance, estimating the cost of capital, estimating the continuing value, calculating and interpreting results, analysing the impact of prevailing regulatory frame work, the global industry outlook, impact of technology and several other environmental factors.

Based on the recommendations of the Disinvestment Commission and in keeping with the best market practices the following four methodologies are being used for valuation of PSUs:

- a) Discounted Cash Flow (DCF) Method.
- b) Balance Sheet Method.
- c) Transaction Multiple Method.
- d) Asset Valuation Method.

While the first three are business valuation methodologies generally used for valuation of a going concern, the last methodology would be relevant only for valuation of assets in case of liquidation of a company. In addition, in case of listed companies, the market value of shares during the last six months is also used as an indicator. However, most PSU stocks suffer from low liquidity and the price determination may not be always efficient. Moreover, there could be increased trading activity after announcement of the disinvestment, which could be

on account of high market expectation of the bid price and even based on malafide intent. This could lead to the price being traded up to unsustainable levels, which is not desirable.

A brief discussion on the aforesaid methods is as under-

- a) Discounted Cash Flow (DCF) Method: The Discounted Cash Flow (DCF) methodology expresses the present value of a business as a function of its future cash earnings capacity. This methodology works on the premise that the value of a business is measured in terms of future cash flow streams, discounted to the present time at an appropriate discount rate.
- b) Balance Sheet Method: The Balance sheet or the Net Asset Value (NAV) methodology values a business on the basis of the value of its underlying assets. This is relevant where the value of the business is fairly represented by its underlying assets. The NAV method is normally used to determine the minimum price a seller would be willing to accept and, thus serves to establish the floor for the value of the business.
- c) Transaction / Market Multiple Method: This method takes into account the traded or transaction value of comparable companies in the industry and benchmarks it against certain parameters, like earnings, sales, etc. Two of such commonly used parameters are: Earnings before Interest, Taxes, Depreciation & Amortisations (EBITDA) and Sales.
- d) Asset Valuation Method: The asset valuation methodology essentially estimates the cost of replacing the tangible assets of the business. The replacement cost takes into account the market value of various assets or the expenditure required to create the infrastructure exactly similar to that of a company being valued. Since the replacement methodology assumes the value of business as if we were setting a new business, this methodology may not be relevant in a going concern.

(Please refer Lesson 5- Business Valuation Methods for referring the various methods of valuation).

Although the aforesaid valuation methodologies being followed are broadly based on the Discussion Paper of the Disinvestment Commission and the best market practices, it is necessary to standardize the valuation methodology for all PSU disinvestments so that there are no variations from case to case. Therefore, all the four methodologies for valuation should be followed for all PSU disinvestments, with further improvements in respect of DCF Method and Asset Valuation Method as detailed below, for arriving at a range of valuation figures, to arrive at the indicative Benchmark or Reserve Price.

DCF Method

In the DCF method, while computing the cash flows, cash out flows for renovation and modernization of plant and machinery should also be discounted for arriving at realistic figures. Since non-core assets are not reflected in the cash flows, the Asset Valuation Method should separately value the non-core assets and they should be added to the valuation figure arrived at by the DCF method.

Asset Valuation

In general, the approach should be used primarily to value the non-core or surplus fixed assets, whose value are not appropriately accounted for in the valuation by DCF or other approaches. However, in cases, where the entity has significant non-core assets and where the application of Asset Valuation approach to the enterprise is deemed necessary, following should be noted:

- i) The Asset Valuation would be more realistic, if we compute the value of only the realizable amount, after discounting the non-realizable portions. The realizable market value of all real estate assets, either owned by the company as freehold properties or on a lease/rental basis will be determined, assuming a non-distress sale scenario. The value would be assessed after taking into account any defects/restrictions/encumbrances on the use/lease/sublease/sale etc. of the properties or in the title deeds etc.

- ii) Since Asset Valuation normally reflects the amount which may need to be spent to create a similar infrastructure as that of a business to be valued or the value which may be realised by liquidation of a company through the sale of all its tangible assets and repayment of all liabilities, adjustments for an assumed capital gains tax consequent to the (hypothetical) outright sale of these assets as also adjustments to reflect realization of working capital, settlement of all liabilities including VRS to all the employees will have to be made.

VALUATION METHODS FOR INDIAN MARKET

Under this section, valuation methods used under selected sectors of Indian economy will be discussed in order to comprehend the applicability of various methods, two sectors have been randomly chosen- Start-ups and Real Estate.

Valuation Resources in India

Regulation	Methodology	Comments
Wealth Tax Act, 1957	Book Value and Capitalization of Earnings @fixed rates	Formulae Driven Valuation
Controller of Capital Issue (CCI) guidelines – 1990		
SEBI – Free Pricing Mechanism – 1992	Comparable Companies	Market Driven Valuation
Guidance Document	Issued by	Nature of Asset
Study on Share Valuation (1994)	ICAI	Securities or Financial Assets
Technical Guide on Valuation (1999)	ICAI	-do-
Valuation guidelines for Disinvestment in PSU's (2003)	Disinvestment Commission	-do-
Guidance Note on Accounting for Employee Share-based payments (2005)	ICAI	ESOP
Guidelines for Valuation of Immovable properties (2009)	CPWD (Income Tax)	Immovable Properties
ICAI Valuation Standard (recommendatory) – CAS 1 (2010)	ICAI	Securities or Financial Assets
Technical Guide on Valuation (2018)	ICAI	-do-
Corporate bond valuation methodology	FIMMDA	Debt

Valuation Resources in India (Ind-AS)

Guidance Document	Notified by	Nature of Guidance
Ind AS 113	MCA	Standard on Fair Value Measurement based on global standards IFRS 13 and ASC 820 (US GAAP)
Ind AS 109, 32 and 107	MCA	Financial Instruments
Ind AS 103	MCA	Business Combination
Ind AS 102	MCA	Share based payment
Ind AS 38	MCA	Intangible Assets
Ind AS 36	MCA	Impairment of Assets

Start-up Valuations

Start-up valuation is different from valuing any running business due to many reasons. Start-ups may not have:-

- i) Business experience
- ii) Operational skill set
- iii) Strong R&D base
- iv) Dedicated execution team
- v) Experience of affording sudden economic shocks
- vi) A required amount of fund etc.

Coming to the valuation approaches, the following methods are embraced by the start-ups-

1. **Asset approach:** New businesses normally have few assets. Under this approach, the market value of all the assets is assigned. Assets include current assets also. Apart from that, a value of intangibles must also be assigned. The combined value will be the value of the business.
2. All principals and employees add value. Therefore, start-ups derive value of their business by assigning a value to all paid professionals based on their skills, knowledge, experience and their contribution to the organization.
3. Another innovative valuation approach used by the start-ups is based on the concept of '*Early customers and contracts in progress add value to the business*'. In view of this, the start-ups transform the existing customer relationship and contracts into monetary value.
4. Earnings multiple approach is used by the start-ups, wherein, the start-ups select the earnings multiple and average earnings are multiplied to reach the valuation figure. This approach is embraced mostly by the more mature start-ups.

However, every start-up needs to focus upon the following significant points irrespective of the valuation techniques embraced-

- a) It should be unbiased.
- b) There should be relevancy of the valuation method.
- c) All the aspects of the valuation should be taken into consideration.
- d) It should be explanatory.

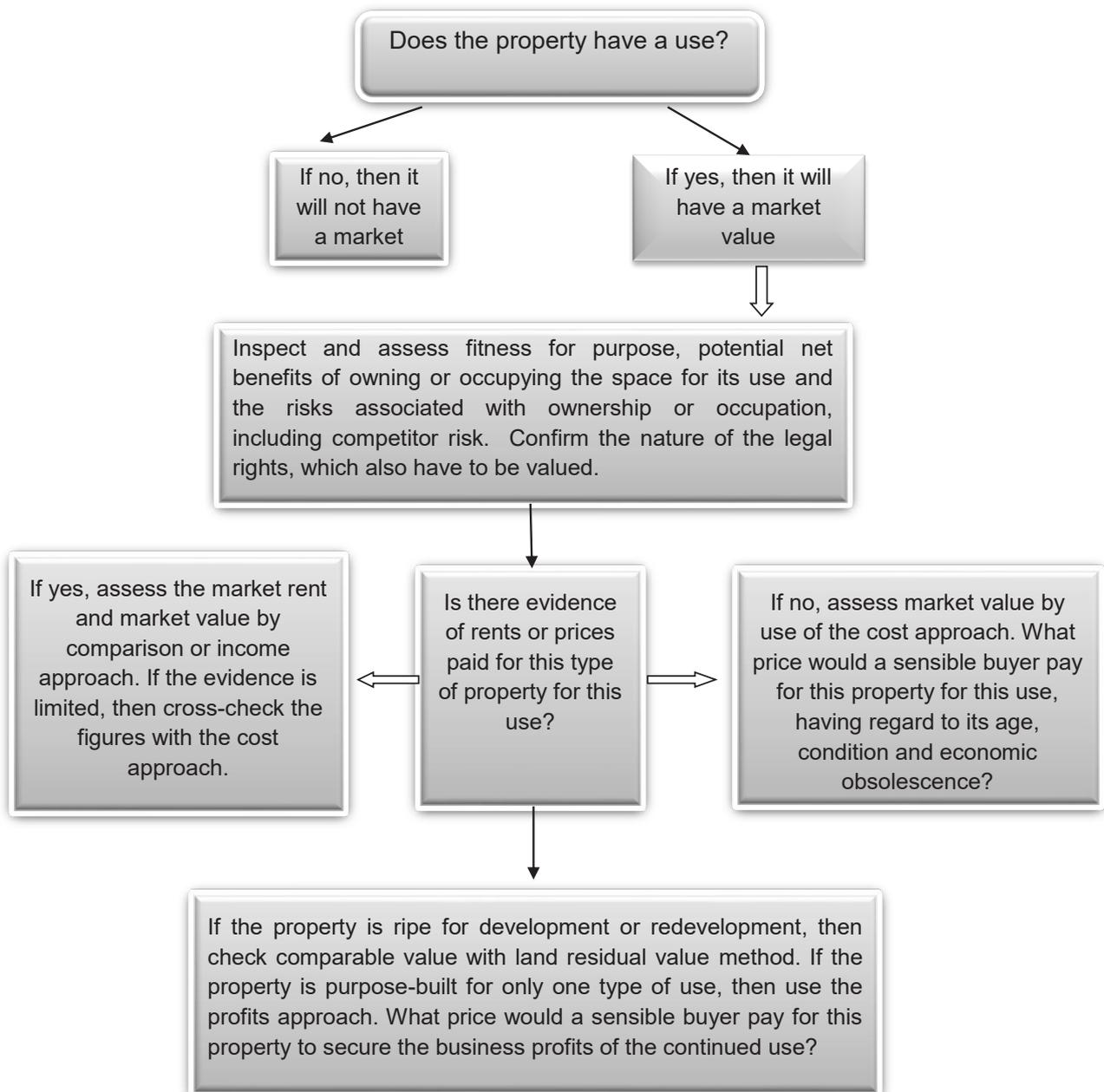
- e) It should serve the purpose of various stakeholders.
- f) It should assist in formulating decisions.

Real Estate Valuations

Before commencing with the discussion on various methods used in real estate sector, it will be of substantial academic interest to have a glance on the valuation method selection process (please refer exhibit 1)

Exhibit 1

Valuation Method Selection Process



Source: http://www.rics.org/Global/Downloads/Valuation_methods_for_the_Indian_Market_1st_edition_PGguidance_2011.pdf

It is important to note that due to absence of transparency and lack of accurate market data, it may be necessary to use a hybrid of the sales comparison and income capitalisation approaches. Historically, in most countries the methods of valuation have been very simple and designed to create a degree of uniformity.

The factors that influence the property valuation are –

- i) Location and civic amenities
- ii) Security and safety
- iii) Layout
- iv) Infrastructure
- v) Demand and supply
- vi) Good connectivity to airport, railways and bus depot.
- vii) Structure

In this section, the following methods will be discussed with reference to Indian real estate sector-

- a) Income Method
- b) Cost Method
- c) Discounted Cash Flow Method
- d) Profits Method

Income method

The income method is used in those markets where buyers are acquiring the right to enjoy future benefits from the asset and where those benefits can be readily expressed in monetary terms. Typically in investment markets, buyers are looking for future income, future value growth or a combination thereof. The income method is used in the bond market, equity share market and real estate market, or where it is possible to assess the relationship between price paid by buyers and the expected income to be derived from ownership. In its simplest form, the relationship is expressed as a multiplier or a yield rate, but becomes more complex where there is a variable income expected and where that income may be time constrained.

The straightforward form of the method is an income multiplier approach (price earnings ratios are used in equity share markets). Earnings or income in the case of property is the rent received by an owner when a property is tenanted. If prices paid for office properties in a given location are 10 times their annual income (rent), then the valuer may reasonably estimate the Market Value of other office properties, with similar legal titles of ownership and building specifications in the same location, by multiplying the annual income by 10. Similarly if the yield – as represented by the relationship between income and price – is 10%, other office properties can be valued by dividing the income by 0.10 (10% expressed in decimal form), or multiplying by the reciprocal of the yield 10 ($1/0.10 = 10$). This process is termed as income capitalisation, and the yield rate is referred to as the capitalisation rate (cap rate).

The income is the total of all the income streams from the property adjusted for any average annual expenses that are to be paid by the owner of the property and are not recoverable through a service charge. Consideration must be given to the actual rent paid and to the market rent. Such comparison might indicate an under-rented, overrented or market-rented property.

Income capitalisation requires two inputs: income and multiplier or yield. In some markets it is the gross income that is capitalised, but the preferred approach is to capitalise the net operating income (NOI) before taxation.

The basis on which tenants occupy property varies from state to state, and sometimes between property types

and from one property to another. It is important to identify who is responsible for:

- building repairs and maintenance;
- building insurances (where applicable) for fire, flood and other losses;
- annual operating expenses for heating, lighting, cleaning, etc.;
- availability and price of parking slots;
- annual taxes payable on the building (this excludes ownership taxes such as wealth taxes); and
- management expenses in the collection of rent and management of the space for the tenants.

This approach requires consideration of whether some or all of these costs are recoverable from the occupying tenants by means of additional annual charges, sometimes referred to as service charges.

In most states a range of occupation agreements or leases can exist under which the various operating costs can be any of the following:

- total responsibility of the tenant(s);
- total responsibility of the owner (landlord);
- payable by the owner, but totally or partially recoverable from the tenant(s); or
- partly the owner's responsibility and liability, and partly that of the tenant(s).

Any non-recoverable liability of the owner must be assessed on an annual average basis and deducted from the gross income to arrive at NOI before capitalisation. For example, a property let at Rs 50,000 a year, with the owner meeting the annual operating costs of Rs 10,000, will only produce a net investment income of Rs 40,000.

Analysis of sale prices in the various income earning sectors of the real estate market must also be on the basis of net income if a net income capitalisation process is to be adopted. Income analysis and capitalisation in this form is only possible where there are comparable sales of similar properties, and where no specific allowance is needed for capital recovery because the ownership title under analysis and valuation is capable of being viewed as one in perpetuity. For this, recovery of capital is assumed to be possible (as with equity shares) through a resale of the property.

Resale may be at a higher or lower figure than the purchase price, depending on market movements and time, neither of which is predictable. However, buyers and sellers in the market will be exchanging at prices that reflect their reasoned expectations of the future. So if the market is reasonably confident that, besides short-term fluctuations, there is no reason to expect future sale prices to be lower than current sale prices, then a capitalisation rate of [x]% can be identified from sales of comparable properties. If at a later date or in a different sector the market anticipates prices will fall, then analysis of sale prices is likely to show a hardening of yields to [x-plus]%.

The valuer is advised to verify, if possible, the circumstances behind a lease transaction, as the lease may not reflect incentives – for instance, the exchange of money initially (cash) that is not recorded in the documents. Where this is not possible, legal due diligence should be recommended. Income statements, operating statements, income and expense records are at times very difficult to obtain in Indian market.

Practical case lets of valuation of property based on Income method

1) Office properties are selling on a yield or income capitalisation basis of 6%. In addition, recent sale prices have been analysed and also consistently support this rate. Another recent sale of a property let at Rs 100,000 has just been completed at Rs 16,66,667. Therefore, the valuer would use the following equation: $(\text{Net income}/\text{price}) \times 100 = \text{yield}$ (Rs 1,00,000/Rs 16,66,667) $\times 100 = 6\%$.

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An office property is to be valued as at this date, market conditions are expected to remain the same and the property is let at Rs 4,35,000. Either of the following equations can be used for the valuation, as they both produce the same result:

$$Rs\ 4,35,000/0.06 = Rs\ 72,50,000\ or\ Rs\ 4,35,000 \times (1/0.06) = Rs\ 72,50,000$$

The market comparable must be of comparable property sales where not only is the property type similar, but so are the terms of tenant occupation. If this is not the case, then the comparable yield evidence may need to be adjusted on the basis of the valuer’s market experience.

2) Where the rent paid is less than the market rent

The valuer uses financial formulae to help solve these problems. The main financial tools used are the following:

Compound interest or the amount of 1 = $(1 + i)^n - 1$

Amount of 1 per period (normally expressed as per annum) = $(1 + i)^n - 1 / i$

Annual sinking fund or sinking fund factor = $i / (1+i)^n - 1$

PV of 1 = $1 / (1 + i)^n$

$$1 - \frac{1}{(1 + i)^n}$$

PVPA of 1 = $\frac{i}{(1 + i)^n - 1}$

Annuity 1 will purchase = $\frac{i}{1 - 1 / (1 + i)^n}$

where i is the rate of interest expressed in decimal form; and n represents the number of interest earning periods at the rate of [i]%. However, the valuer generally uses sets of valuation tables, financial calculators or valuation software in preference to repetitively solving of these equations.

The functions used in valuation and investment analysis are normally present value (PV) and present value of 1 per annum (PVPA). Market Value of investment is the present capital value of all future benefits and liabilities discounted and summated to a net present value (NPV) sum at [i]%.

The income method for assessing the Market Value of property follows the same PV concepts. The calculations can be set out on a cash flow or as a capitalisation exercise reflecting the known rental income changes.

The ownership of an office building is for sale, and its rent being paid by the tenants is currently Rs 1,00,000. Market rental evidence suggests that if vacant and to let at present the building would be Rs 1,25,000 and rents are expected to remain constant over the next three years. The current tenants have occupation rights at this rent for the next three years. Properties of this type are currently selling in the market at yields of 6%. All rents are net incomes.

Particulars	Amount
Current rent	Rs 1,00,000
PVPA (YP) at 6% for 3 years	× 2.6969

	Rs 2,69,690
Market rent	Rs 1,25,000
PVPA at 6% in perpetuity (1/i=1/0.06)	× 16.66667
	Rs 20,83,333
PV at 6% for 3 years	× 0.8516
	Rs 17,74,167
	+ Rs 20,83,333
Market Value	Rs 20,43,857

The capitalisation has been completed by finding the PV of the right to receive Rs 1,00,000 for three years, which could have been considered as three separate amounts of Rs 1,00,000. However, as it is a constant amount for each year, the PVPA (YP) figure can be used as it is the sum of the PVs for one, two and three years. In three years' time the current tenant rights come to an end and in an unfettered market the valuer, who has arrived at a market rent of Rs 1,25,000, can assume that sum will be obtainable on a new letting. This can be treated as a capitalisation in perpetuity, discounted or deferred for three years using the PV of 1 at 6%. If the current tenant was paying the market rent now, then Rs 1,10,000 could be capitalised at 6% (Rs 1,25,000/0.06 = Rs 20,83,333). Due to the current occupation rights, the Market Value of this property is less at Rs 20,43,857.

Typically, especially in volatile markets like India, rents may not be expected to remain constant over a period of three years. In such a scenario, the valuer has to ascertain or estimate the market rent at the time of the existing lease's expiry and use that to capitalise to perpetuity.

There may a loss of income after the existing tenant vacates the property owing to time required to market and re-furnish the property. If the valuer thinks it will take three months to find a new tenant and another three months may be rent-free for refurbishing the interiors, then the cash flow will have to be discounted for 3.5 years.

3) Leasehold Premises- Calculation of Market Value

Particulars	Amount
Net income	Rs 50,00,000
Income multiplier for 100 yrs at 6.5%	× 15.3846
Market Value	Rs 7,69,23,000

If an older shopping centre is held on lease with only 30 years left and a net income to the leaseholder of Rs 5,00,000, the valuer may consider that in comparison with the new centre, the 6.5% should be adjusted to 9% to reflect the risks of the shorter period and the older buildings. This would give a value of earning Rs 5,00,000 for 30 years at 9%, or Rs 51,36,850. In this case, the valuer does not have direct comparable evidence and has to answer the following question: Given the comparables that are available, what rate of return would investors need to compensate for the extra risks associated with buying this property? In the absence of direct comparables the valuer could turn to the markets outside the defined local market for evidence to support the yield used.

In India, the leasehold net income is often referred to as rental inflow. Current Indian leasehold valuation practice is to use one of the following approaches:

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- capitalise the rental inflow at an appropriate market derived rate, as shown in paragraph 3.26; or
- use the discounted cash flow (DCF) method for the more complex leasehold valuations where there may be variations between the lease start and escalation dates, or lock-in periods. This method is useful when valuing a multi-tenanted building with different lease terms for each tenant.

Cost Method

The cost approach is based on the supposition that no one would pay more or accept less for an existing property than the amount it would cost to buy an equivalent property, in terms of size and location, plus the cost of constructing an equivalent building at present. Where used for properties that are not new, the cost figure will be written down for age or obsolescence. The cost in such cases will be based on the cost of a simple substitute rather than that of replicating the actual building.

The method is sometimes used as a check measure for a market comparison valuation. The variances that can occur due to demand exceeding supply mean that, on many occasions, cost and Market Value simply cannot equate. Location can give real estate a monopoly in that there is no other substitute parcel of land with the same potential or utility in the same location. In addition, supply and demand push the price (value) of the property above the value of any substitute property.

In other situations, over-improvement can mean that cost will considerably exceed Market Value. For example, a hotel with 5,000 rooms on a holiday island with typical inflow of only 1,000 tourists a day will be of low value compared to its cost. This method also ignores the possible loss of income that may result in constructing a property with similar utility, which often leads to value exceeding cost to replace.

The cost approach is usually referred to as the depreciated replacement cost (DRC) method when used in the context of financial reporting. The cost approach requires the valuer to consider three elements:

- the cost or value of an equivalent parcel of land;
- the cost of constructing a replica, a simple substitute building or a modern equivalent building; and
- an allowance for depreciation

The value of the land does not usually depreciate and may be assessed using normal Market Value approaches, the best method being direct sales comparison of similar land being bought and sold for similar purposes.

The gross replacement cost (GRC) of the buildings is calculated using current cost figures to which the following related costs are added:

- site works;
- architect's fees;
- building permit costs; and
- finance (interest) charges on bank borrowing to cover the costs.

If the existing building can be replaced with a modern equivalent building at a lower cost, then the modern equivalent cost figure is used.

The GRC has to be adjusted to reflect the hypothetical buyer's perception of the likely difference in utility between the replica newbuild, or modern equivalent, and the actual building(s) on the site. IVS recognise the need to account for physical deterioration, functional or technical obsolescence, and economic or external obsolescence. A major factor at present may be depreciation arising from new buildings requiring lower carbon footprints.

The allowance for depreciation is made after comparing the age, design and use of the existing building with a brand new building. A relatively new building, say less than three years old, is likely to show little depreciation

compared to a building used for the same purpose which is 30 years old. A historic building which is protected may also display only slight depreciation. Four approaches to depreciation are recognised: overall depreciation, written-down value depreciation, straight-line depreciation and S-curve depreciation.

An experienced valuer should be able to arrive at an overall rate. For example, a building which would cost Rs 10,00,000 to replace might need to be depreciated for various factors at an overall rate of 75%, thus giving a DRC figure of Rs 2,50,000.

Buildings that are repairable and, through such repair, could again be 100% economic could be assessed by accounting for the cost of remedial in the GRC.

Buildings very rarely depreciate in a straight line and more typically follow an S-curve basis, which is slow at the beginning and fast at the end of the building's life. Making a realistic, sensible and supportable adjustment for depreciation is at the heart of this method.

Application of Cost Approach

The cost approach is used in many states as a valuation method of last resort, only to be used when it is impossible to find market evidence. The calculation is of the DRC and the resultant figure can be used only for certain classes of asset for the purpose of compliance with the International Financial Reporting Standards (IFRS) or other reporting standards. As it is not based on market evidence the final sum should be expressed as a non-market valuation.

In developing markets, it can take a long time for an adequate database of comparable sale prices to be established. A cost approach is sometimes used in these markets and is seen by buyers and sellers as a surrogate for a market valuation. Here the cost approach should be reconciled with the best figures obtained from one of the other market methods and is not recommended as a sole approach.

Caselet based on Cost method

1) A popular approach is to use straight-line depreciation, taking account of the building's economic life and remaining useful economic life. A 15-year-old building with an expected remaining life of 25 years and a total life of 40 years could be depreciated using a straight-line basis. The average annual rate of depreciation would be $100/40$, which is 2.5% a year. Therefore, the accumulated depreciation after 15 years would be 15 times 2.5%, which is 37.5%, and would mean reducing Rs 10,00,000 by Rs 3,75,000 to Rs 6,25,000. To this figure the valuer would then add the land value figure. As per Indian Accounting Standards (AS) and taxation norms, the written-down value method is recommended for this caselet.

Residual Method

This method is used to assess the Market Value of land, or land and buildings, where there is potential for the land to be put to a higher value use. Examples include:

- ❖ farm land being sold for residential, commercial or industrial development;
- ❖ existing buildings which could be cleared and the land redeveloped for another use; and
- ❖ existing buildings which could be converted to another, more valuable use.

The method is sometimes known as the 'development method'. Development in this context refers to the highest and best use, in terms of value, that is physically possible, legally permissible and economically viable. The economic factors that cause a change in land use will usually also cause a change in land value.

This method ignores the time required to actually complete the improvements (structure/ building). Therefore in markets such as India, where risk associated with property investments results in the applicable discount rate being relatively high, arriving at Market Value through a residual method may not be appropriate.

Land should be valued by direct sales comparison where there is sufficient market evidence of land sales in similar locations for similar purposes. The residual method can be used as a check-measure in these cases.

Where there is no comparable sales data, the residual method can be used to arrive at a figure that would represent the Market Value of the land, given the specific assumptions applied when preparing the valuation. However, any variation to the assumptions, such as a change in permitted density or zoning, will alter the opinion of Market Value, and hence residual method is often not accepted by banks and state authorities. It is still a logical assessment of a developer or contractor's approach to the assessment of the amount to be paid to acquire a specific area of land, or land and buildings, for a specific new development, redevelopment or refurbishment project.

The valuation approach: There are four stages in this method:-

Stage 1: assess the best scheme of development for the land;

Stage 2: assess the value of the assumed development on completion;

Stage 3: assess all the costs of completing the assumed development scheme; and

Stage 4: estimate residual land value

Stage 1: Assess the best scheme of development for the land

For the first stage of this method, the valuer establishes the development or redevelopment/ refurbishment potential within the market for that parcel of real estate in that location.

The method is used to assess value on a 'what if' basis. This means that the resultant figure is dependent upon all necessary permissions, licences and other authorisations being obtained to undertake the scheme. Any calculations on this basis must be qualified fully with all the assumptions that have been made.

A typical scenario is where the physical, legal and other requirements are more certain. Planning in some states may be on a clear zoning and density basis, with clear guidance on height and daylight requirements. In other states, areas may be allocated for residential, commercial, industrial or mixed use; for these the valuer will have to undertake careful appraisal of all the development opportunities and ascertain the highest and best use. No matter the circumstances, the valuer must specify all the assumptions underpinning the valuation. The assumptions need to be based on clear assessment of economic (market), and the legal and physical forces apparent at the time of the valuation.

Stage 2: Assess the value of the assumed development on completion

The value of the completed development is the Market Value of the proposed development assessed on the special assumption that the development is complete as at the date of valuation in the market conditions prevailing at that date. This is widely referred to as the gross development value (GDV).

The GDV is calculated using the comparative or income approach. The comparative method is used for developments of apartments and houses. Where the scheme is of a commercial nature and the space created is likely to be leased, then GDV is estimated using the income approach.

GDV is adjusted for any selling costs, marketing costs and, in the case of let property, the agent's fees for securing the tenant(s), to arrive at the net development value (NDV).

Stage 3: Assess all the costs of completing the assumed development scheme

In this stage, the valuer assess all the development costs, including an amount for normal profit and for the finance costs and interest charges on the capital (money) needed to fund the whole of the scheme. The costs can be broken down into three categories: pre-construction, construction and post-construction.

- costs of all permissions, licences to build and other costs that may have to be met before construction can begin;

- survey costs, including site measurements, environmental and archaeological surveys, and soil/subsoil investigations to determine load bearing; and
- site clearance expenses, including demolition and the cost of contamination cleaning of the site

Construction costs are scheme-specific, but would normally include:

- ❖ build costs assessed by a qualified cost estimator or quantity surveyor (there may be state-specific sums that might offset some costs of development, such as capital allowances or subsidies);
- ❖ fees and expenses of all professional advisers, such as architects, project managers, civil engineers, cost estimators, electrical engineers;
- ❖ any highway, utility connection costs or area improvement costs that are a requirement of the building consents;
- ❖ costs relating to the securing of the capital to undertake the development and the likely interest charges on borrowed money; and
- ❖ non-recoverable charges, such as value added tax (VAT/TVA) or building taxes.

An allowance is to be made to reflect the opportunity cost of the principal, even if the developer is funding the project internally. This is done on the assumption that the completed fully let and income-producing development is to be sold, or long-term finance is to be obtained on its transfer to the developer’s investment portfolio. This allowance is also included where the development is to be owner-occupied.

The developer’s normal profit margin is also always to be accounted for in the construction costs. It is normally assessed as a percentage of total construction cost or as a percentage of the GDV. The typical percentage and basis of assessment will be known within a given market.

Post-construction costs could include:

- ❖ marketing costs and associated fees
- ❖ landscaping.

Stage 4: Estimate residual land value

The costs are added together and deducted from NDV to arrive at a gross residual value, which may have to be further adjusted to assess the net residual value. This adjustment reflects any costs that may be incurred on the acquisition of the land, or the land and existing buildings. These costs include any land sale tax and associated legal and title transfer fees. In addition, the residual must allow for the cost of interest payments on money borrowed to purchase the site. This latter allowance is usually made by finding the PV of the gross residual value at the interest rate used for the finance charges for the total estimated period of the development.

Caselet based on Residual Method

1) *Calculation of Gross Residual Value*- Valuation of an area of land with consent to construct 6,000 sq.ft. of office space in a building with a gross build area of 6,500 sq.ft., given these assumptions:

Particulars	
Market rent	Rs 2,000 per sq.ft. per year
Building costs	Rs 2,000 per sq.ft.
Development period	2 years

Letting cost	10% of first year's rent
Sale fee	2% of development value
Professional Fees	3% of all costs
Interest on borrowed money	14%
Market capitalisation rate	12%
Developer's profit	25% of construction cost.

Solution:

Gross Development Value (GDV)	
Particulars	
Annual rent	Rs 1,30,00,000
Capitalised at 12%	Rs 10,83,33,333
Letting fees at 10%	Rs 13,00,000
Sale fee at 2%	Rs 21,66,666
Total fees	Rs 34,66,666
Capitalised rent – total fees	Rs 10,48,66,666
Net Development Value (NDV)	
Particulars	
Construction costs	Rs 1,30,00,000
Fees at 3%	Rs 3,90,000
Interest at 14% for one year	Rs 18,74,,600
Costs before profit	Rs 1,52,64,600
Profit on costs at 25%	Rs 38,16,150
Total costs	Rs 1,90,80,750
GDV – NDV	
Gross residual value	Rs 8,57,85,916

The residual method has been simplified in this example to emphasise the four steps. In practice, the inputs can be considerably greater in number, as every individual item of cost can be assessed separately. A cash flow format allows for the more accurate assessment of interest charges and the expected timing of each outflow and inflow of money.

Direct sales comparison is the preferred method for assessing the value of development land. The residual approach is used by developers to assess the maximum bid price they can afford to pay for a development site. Valuers are expected to mirror market behaviour, and hence the same approach is considered acceptable in the absence of direct comparables for assessing the value of development land.

Discounted Cash Flow Method

The discounted cash flow (DCF) method is frequently preferred to income capitalisation. DCF is a standard tool for investment analysis and is used in all investment markets. When valuing property, valuers are seeking to mirror market behaviour, hence the argument that if buyers base their decision to purchase an asset using DCF, then DCF should be used to estimate Market Value.

The DCF method can be used to assess Market Value. When used for this purpose, all the variables used in the calculation must be based on market evidence. If any of the variables, such as the discount rate or the rental growth rate, are instead based on a client's data or requirement, then the result of the calculation is not the Market Value, but the worth or investment value to that client on those specific assumptions. In such case the valuer is recommended to state this in the report.

The valuation approach: A DCF valuation differs from market capitalisation in the following ways:

- ✓ Income is specified over a given time period, or projection period, to provide a statement of cash inflows over that time period on an annual, quarterly or monthly basis. The time period rarely exceeds 10 years.
- ✓ The cash flow will normally incorporate an adjustment for income growth. Whereas capitalisation reflects growth in the capitalisation rate, a DCF will specify a growth in income (rent) based on market assumptions.
- ✓ The cash flow will include all normal expenditures, including any non-recoverable operating expenses such as repairs, property insurances, management costs and capital expenditures (e.g. anticipated renewal and replacement costs over the projected period for building elements, fixtures, fittings, plant). If there is a separate service charge then cash outflows will be minimal.
- ✓ A market-based assessment of the resale price of the property at the end of the cash flow must be included. In some circumstances this can be negative, as with extractive industries when the land may have to be returned to the pre-extraction agricultural activity.
- ✓ The cash flow will identify the net cash flow per period.
- ✓ The discount rate used to assess the PV of the net cash flow will be specified. For a Market Value DCF, the discount rate must be based on market assumptions. Where growth has been included in the cash flow, the valuer must not use a market-based capitalisation rate as the discount rate.

DCF can be used for Market Value estimates of both income-producing and development properties, in place of the residual method. It can also be used in place of the profits method for Market Value estimates of business properties where the business is normally bought and sold as a single entity, such as hotel properties. However, its use for Market Value purposes must be distinguished from its use as an analytical tool to assess NPV or internal rate of return to be achieved from a property-based investment opportunity.

Caselet based on Discounted Cash Flow Method

A simplified DCF valuation is set out below. The rental growth rate used is a market-derived rate of rental growth, while all other variables are market-based. It can be seen here that the DCF valuation of Market Value has been reconciled with the market income capitalisation approach. This will not always be the case, and where there is a difference the valuer must exercise professional judgment as to which approach offers the most

valid opinion of Market Value. The target or discount rate is market derived from government bond rates, plus a market adjustment for the risks associated with property as an investment.

Discounted cash flow valuation

Particulars	
Market rent	Rs 1,00,000
Rent payable	Rs 1,00,000
Growth (%)	2.7225%
Rent review/lease renewal	5
Cap rate	4.5%
Target rate	7.0%
Terminal cap rate	4.5%

Year	Rent	PV at target rate	Rent PV
1	Rs 1,00,000	0.9345794	Rs 93,458
2	Rs 1,00,000	0.8734387	Rs 87,344
3	Rs 1,00,000	0.8162979	Rs 81,630
4	Rs 1,00,000	0.7628952	Rs 76,290
5	Rs 1,00,000	0.7129862	Rs 71,299
6	Rs 1,14,374 (1.27225 ⁵)	0.6663422	Rs 76,212
7	Rs 1,14,374	0.6227497	Rs 71,226
8	Rs 1,14,374	0.5820091	Rs 66,567
9	Rs 1,14,374	0.5439337	Rs 62,212
10	Rs 1,14,374	0.5083493	Rs 58,142

Profits Method

The profits (or income approach) method is used for income-producing properties that are specifically designed for a particular type of business activity. It is typically also used when either the physical buildings are only sold as part of a business, or the buildings are constructed solely for that type of business and can only be used for an alternative business after substantial alterations. Examples are:

- hotels;
- golf courses, and other purpose-built sport and leisure centres;
- petrol stations; and
- some restaurants.

It is also known as the 'receipts and expenses' or 'income and expenditure' method, as the first step is to

establish the level of maintainable profits. Valuers in these markets develop an awareness of the normal income and expense associated with a particular business activity. They are therefore able to deduce from a set of accounts what is normal and maintainable and, by comparison with other known examples of the same type of building and activity, whether the level of profit is typical or could be improved with a better style of management.

The maintainable profit excludes any abnormal income generators that would cease upon a market sale. For example, a restaurant will generate one level of profit while run by a named three-star Michelin chef, but a different level of profit when run by a non-Michelin chef.

In each specialist market, valuers are aware of profit multipliers used to convert the estimate of maintainable profit into a capital value. These multipliers will be adjusted by taking account of any factors that might lead to an increase or decrease in annual profits. A hotel built for visitors to the Olympic Games may generate excellent profits for a short time, but would be expected to fall back subsequently. Conversely, a hotel constructed and completed ahead of the opening of an airport on an idyllic island might have low profits initially, but may have an expectation of better profits once the airport is completed.

In some situations a more direct valuation by comparison may be possible because profit is a direct function of another factor, such as turnover or throughput. Examples might be petrol filling stations where the market knows that a certain price per litre is what petrol companies will pay for the ownership of that depot. In addition, hotels might be valued in a competitive market with good sales comparisons at a price per bedroom; here, an adjustment might be made for the known occupancy level. For example, one hotel might be fully let every night of the year, while another might achieve an average of 85% occupancy. The hotel valuation experts can make adjustments based on considerable market experience.

This guidance note does not give examples for the application of the method, as it depends on the given market and local accounting practices that have to be understood if maintainable profits are to be accurately estimated. In other words, it is very type-specific in use. The maintainable profits may be set out as a DCF with growth projections.

Valuers are not recommended to utilise the profits method as the sole approach to valuation. Instead, it should be used only in special cases where the nature of the property is specialised and information is not available to justify the other three key approaches, in combination or in support of any other approach.

INDIAN VALUATION STANDARDS

The importance of valuation and its recognition in the financial world in situations of buyout, mergers or insolvency is increasing in the Indian economy. With the Insolvency and Bankruptcy code fully functional, the importance of valuation has become noticeable. Judiciaries have started allocating higher weightage to valuations, recently in the case of Binani Cements Ltd¹, the National Company Law Tribunal (“NCLT”), Kolkata Bench raised questions on the authenticity of the valuation of stressed assets, done by the Resolution Professional.

The IVSs are in conformity with the provisions of the applicable laws, customs and usages in India. However, if any deviation exists, the provisions of the law will prevail and the valuation report should be prepared in conformity with such law.

A valuation report will be regarded as compliant of the IVS only when all the requirements of each of the relevant Valuation standards, to the extent applicable are met.

Companies Act 2013 and Rules on Valuation

Before we get into detailed discussion of the IVS, let us take a note of the various requirements under the Companies Act with respect to valuation.

As per section 247 of the Companies Act, only registered valuers can carry out valuation under Companies Act. Subsequently, separate rules were also issued, called the Companies (Registered Valuers and Valuation)

Rules, 20173 (“Valuation Rules”), which provide for the eligibility conditions, registration requirements etc. for Registered Valuers.

As per the Valuation Rules, a transition time till 31st March, 2018 was allowed to the valuers to get themselves registered under the Act. This time period was however extended till 31st January, 2019.

Indian Valuation Standards

The ICAI has notified 8 valuations standards and the some of them draw parallels from the International Valuation Standards. The standards issued by the ICAI and their corresponding global standard have been presented below:

Indian Valuation Standard		International Valuation Standard	
IVS 101	Definitions	No corresponding standard	
IVS 102	Valuation Bases	IVS 104	Bases of Value
IVS 103	Valuation Approaches and Methods	IVS 105	Valuation Approaches
IVS 201	Scope of Work, Analyses and Evaluation	IVS 101	Scope of Work
IVS 202	Reporting and Documentation	IVS 103	Reporting
IVS 301	Business Valuation	IVS 200	Business and Business Interest
IVS 302	Intangible Assets	IVS 210	Intangible Assets
IVS 303	Financial Instruments	IVS 500	Financial Instruments

Key Takeaways of the IVS

i) IVS 101- Definitions

The IVS 101 provides definitions and principles which a Valuer should refer while undertaking a valuation engagement. The definitions enunciated in this standard shall guide and form the basis for certain terms used in other IVS.

However, these definitions do not apply to valuations where a Valuer is required to use a definition prescribed by any law, regulations, rules or directions of any government or regulatory authority.

Some of the definitions from Ind AS 113 – Fair Value Measurement have been retained here as well, with some modifications in certain cases. The ones which have been are - “Active market”, “Fair Value”, “Cost Approach”, “Income Approach”, “Highest and Best Use”, “Market Approach”, “Market Participants”, “Observable inputs”, “Orderly transactions”, “Unobservable inputs”.

In addition to the aforesaid, there have been some new additions as well. IVS 101 shall be referred for terms and definitions required to be used in a valuation engagement, as the valuation standards will come into practice, we are hoping we may see additions and modifications in IVS 101.

ii) IVS 102- Valuation Bases

The objective of IVS 102 is to define the major valuation bases and prescribe the corresponding fundamental assumptions on which such valuation will be based and provides the premises of values.

Considering the fact that different valuation bases may lead to different conclusions of the value IVS 102 provides three valuation bases which are required to be chosen by the Valuer considering the terms

and purpose of the valuation engagement viz. - fair value, participant specific value and liquidation value.

Fair value means the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the valuation date.

Participant specific value is the estimated value of an asset or liability after considering the advantages and disadvantages that may arise to the owner, identified participant or identified acquirer.

Premise of value refers to the logic behind the current and future use of the asset. Some common premises of value are Highest-and-best-use, as-is-where-is, going concern value, orderly liquidation and forced transaction.

There may be a situation where more than one premise of value be applied. IVS 102 provides that a Valuer may choose more than one premise of value depending on the selection of valuation bases.

iii) **IVS 103- Valuation Approaches and Methods**

This Standard defines approaches and methods for valuing an asset. The three main approaches of valuation as provided by IVS 103 are- market approach, income approach and cost approach.

IVS 103 provides various valuation methods which benefit for each approach. The underlying driver for selecting the appropriate approach and methods by a Valuer will be based on valuation bases and premises of value.

Also, some of the key factors that a Valuer shall consider while determining the appropriateness of a specific valuation approach and method are:

- a) nature of asset to be valued;
- b) availability of adequate inputs or information and its reliability;
- c) strengths and weakness of each valuation approach and method; and
- d) valuation approach/method considered by market participants.

However, IVS 103 states that if the Valuer is required to adopt valuation bases that are prescribed by a statute or regulation then in such cases, the prescribed base shall apply and the Valuer shall adopt specific methods or formulae as have been laid down under the statute or regulation.

The valuation methods given in IVS 103 may be regarded as a subset of the valuation approach chosen by the Valuer. Some of the valuation methods provided in IVS 103 are discounted cash flow method (DCF), market price method, comparable companies multiple method, relief from royalty method, replacement cost method and reproduction cost method, etc.

iv) **IVS 201- Scope of Work, Analyses and Evaluation**

IVS 201 sets out the responsibilities of the Valuer and provides as a guidance on how a Valuer should determine its scope of work and extent of analyses and evaluations required.

This standard also serves as comprehensive guide on how and to what extent a Valuer should make analyses and evaluations of facts.

A Valuer should make analyses and evaluations through discussions, surveys, inspections and various calculations, etc. and the extent of such analyses and evaluation depends on the terms and purpose of the engagement.

According to IVS 201, the terms and conditions of an engagement must be clear to avoid any misunderstanding between a Valuer and a client.

IVS 201 also provides as a guidance on to what extent a Valuer should place reliance on the work of an expert and the responsibilities of the Valuer while using work of other experts.

While relying on information available for an asset to be valued, IVS 201 lists out the type of information required to reach to a valuation conclusion such as:

- (a) non-financial information;
- (b) ownership details;
- (c) financial information; and
- (d) general information

v) **IVS 202- Valuation Report and Documentation**

IVS 202 provides the minimum content a valuation report ought to have, the basis for preparation of the valuation report and the supporting documentation required to be maintained.

The form and content of the valuation report shall depend upon the nature of engagement and the purpose of valuation.

A Valuer shall at a minimum include the following in the valuation as per Rule 8 of Registered Valuer Rules :

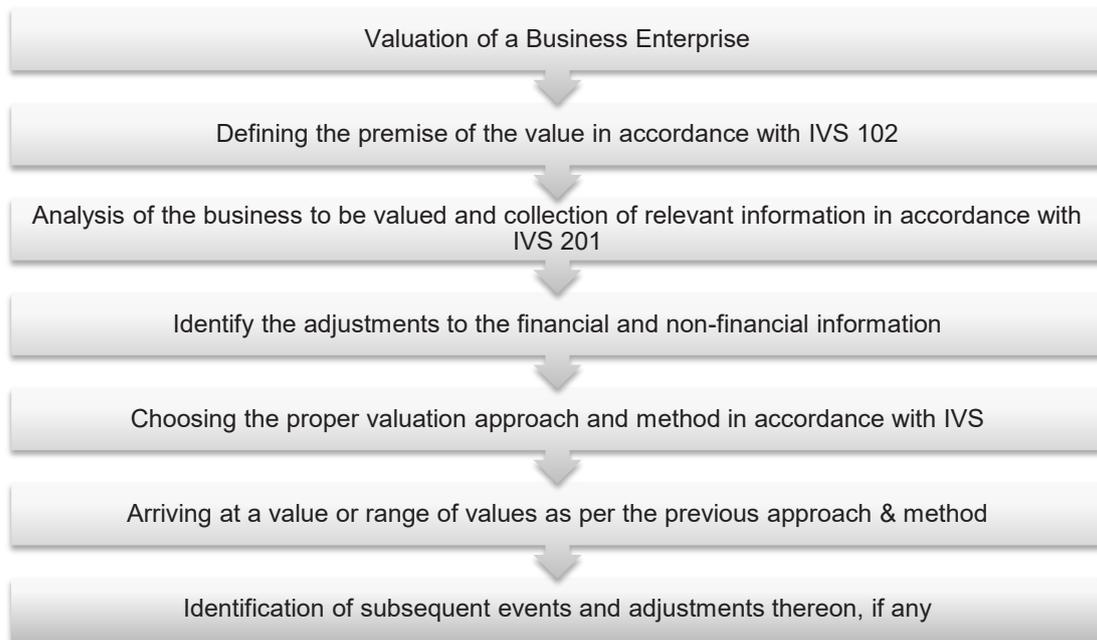
(a) background information of the asset being valued;
(b) purpose of the valuation and appointing authority;
(c) the identity of the Valuer and any other experts involved in the valuation;
(d) disclosure of the Valuer’s interest or conflict, if any;
(e) date of appointment, valuation date and date of the valuation report;
(f) inspections and/or investigations undertaken;
(g) nature and sources of the information used or relied upon;
(h) procedures adopted in carrying out valuation and valuation standards followed;
(i) valuation methodology used;
(j) restrictions on use of the valuation report, if any;
(k) major factors that were taken into account during the valuation;
(l) conclusion; and
(m) caveats, limitation and disclaimers to the extent they explain or elucidate the limitations faced by Valuer, which shall not be for the purpose of limiting his responsibility for the valuation report.

A Value should document the methods & procedures adopted for valuation, relevant evidences obtained, its observations based on those evidences and management representations.

vi) **IVS 301- Business Valuation**

IVS 301 is applied for valuation of an entire business enterprise for various purposes such as acquisitions, mergers, leveraged buyouts, initial public offerings, employee stock ownership plans and other share-based plans, partner and shareholder buy-ins or buy-outs, and stock redemptions or valuation under Insolvency and Bankruptcy Code to name a few.

According to IVS 301, the methodology required to be applied by a Valuer in valuing an entire business enterprise diagrammatically presented below :



vii) **IVS 302- Intangible Asset**

IVS 302 provides specific guidance on valuation of an intangible asset including goodwill, brand value, license etc. which are not covered by any other standard.

IVS 302 lists out an inclusive categorisation of Intangible assets which are:

- Customer-based intangible assets;
- Marketing-based intangible assets;
- Contract-based intangible assets;
- Technology-based intangible assets; or
- Artistic-based intangible assets

IVS 302 provides that the similar valuation approaches as enunciated in IVS 103 Valuation approaches and Methods apply to the valuation of intangible assets. The valuation methods are based on whether the intangible assets are internally generated or externally acquired. One of the methods under income approach viz. "With and without method" requires the value of the intangible asset to be valued being equal to the present value of the difference between the projected cash flows over the remaining useful life of the asset under the following two scenarios :

- business with all assets in place including the intangible asset to be valued; and
- business with all assets in place except the intangible asset to be valued. Other methods which come under the income approach relevant for valuation of intangible assets are greenfield method, distributor method, reproduction cost method and replacement cost method, etc.

viii) **IVS 303- Financial Instruments**

IVS 303 is required to be applied for valuation of financial instruments viz. financial assets financial liabilities and equity instruments. The requirement of valuation of financial instrument arise in cases of transactional pricing i.e. to buy or sell the financial instrument and majorly for financial reporting purposes.

IVS 303 provides that since the financial instruments are generally aligned to market linked factors, it is preferred that usage of market linked methods are preferred to arrive at a value and accordingly for the valuation of financial instruments, use of observable inputs should have an upper hand than use of unobservable inputs.

The standard recognises the importance of adjustment of credit risk in valuing a financial instrument hence provides certain factors required to be considered such as Counterparty risk, Capital leveraging, Security hierarchy, Collateral and default protection, History of defaults and Offsetting: In cases of valuation being based on unobservable inputs, the Valuer should provide consideration for control environment consisting of the governance and control procedures that are set in place by an entity with the objective of increasing the reliance on the valuation process and conclusion.

International Valuation Standards (IVS) 2017

At this juncture, it will be pertinent to have an expansive discussion on the International Valuation Standards 2017 in order to gain deep insights and a holistic picture on valuation. IVS 2017 consist of five General Standards and six Asset Standards. The General Standards specify requirements with reference to conducting of all valuation assignments including establishing the terms of a valuation engagement, bases of value, valuation approaches and methods, and reporting.

The Asset Standards cover requirements pertaining to specific forms of assets, including background information on the characteristics of each asset type that affect value and additional asset- specific requirements pertaining to common valuation approaches and methods used. The asset standards entail the following:

- i) Businesses and Business Interests (IVS 200).
- ii) Intangible Assets (IVS 210).
- iii) Plant and Equipment (IVS 300).
- iv) Real Property Interests (IVS 400).
- v) Development Property (IVS 410).
- vi) Financial Instruments (IVS 500).

A description on the aforesaid International Valuation Standards is as under:

- i) **Business and Business Interests (IVS 200)** : Based upon the discussions with stakeholders it was observed that there was a substantial amount of confusion relating to the contents, i.e. in IVS 200 *Business and Business Interests* represented compulsory standards versus non-mandatory commentary. The Board noted that in IVS 200 *Business and Business Interests*, like several other IVS 2013 standards, all substantive portions were labelled as “commentary” with the exception of the scope and effective date sections. The Exposure Draft of IVS 200 eliminated the “commentary” label to make it clear that the contents are mandatory for compliance with IVS.

The Board is of the view that one of the basic purposes of standards is to decrease diversity in practice. The IVSC (International Valuation Standards Council) reached out to stakeholders and identified numerous areas of diversity in practice pertaining to the valuation of business and business interests. As a result of that outreach, the Exposure Draft of IVS 200 *Business and Business Interests* covered new requirements pertaining to:

- a) An overview of business and business interests and the circumstances in which they are valued,
- b) The selection of valuation approaches and methodologies,
- c) How debt and capital structure should be considered in certain valuations, and

d) Treatment of non-operating assets.

- ii) **Intangible Assets (IVS 210)** : In the case of intangible assets, the Board noted that in IVS 210 (like several other IVS 2013 standards), all substantive portions of the standard were labelled as “commentary”, with the exception of the scope and effective date sections. The Exposure Draft eliminated the “commentary” label to make it vivid that the contents are compulsory for compliance with IVS.

The Board’s outreach also indicated that there was some confusion related to the publication of guidance related to the valuation of intangible assets in two documents, IVS 210 Intangible Assets and TIP (Technical Information Paper) 3 The Valuation of Intangible Assets. Based on that feedback, the Board incorporated certain relevant parts of TIP 3 into the Exposure Draft. Upon finalisation of the proposed IVS 210, the Board rescinded TIP 3 as a standalone document.

Some stakeholders pointed out that in IVS 2013, the intangible assets standard was too high level and did not meet the needs of the market and stakeholders. In addition, some stakeholders felt IVS 210 was too focused on valuation of intangible assets for financial reporting purposes. For example, IVS 210 used the IFRS/US GAAP criteria to describe when an intangible asset is separable from the other assets of a business. The Board recognises that intangible assets may be valued for a variety of purposes and this standard has been written in a way that the Board believes is more inclusive of the variety of purposes under which intangible assets may be valued.

- iii) **Plant and Equipment (IVS 300)** : It is to be noted that the Board has changed the numbering of many of the asset standards to bring in more flexibility in future standard-setting activities. Consequently, this standard which was IVS 220 in IVS 2013, has been re-numbered as IVS 300.

The Board is of the belief that one of the fundamental purposes of standards is to bring down diversity in practice. The IVSC reached out to stakeholders and identified numerous areas of diversity in practice related to the valuation of real property interests. As a result of that outreach, this Exposure Draft includes new requirements related to:

- a) An overview of plant and equipment and the circumstances in which they are valued, and
- b) The selection of valuation approaches and methodologies.

- iv) **Real Property Interests (IVS 400)** : The Board has changed the numbering of many of the asset standards to allow for more flexibility in future standard-setting activities. As a result, this standard, which was IVS 230 in IVS 2013 has been re-numbered as IVS 400.

Some comments were received that, prior to IVS 400 defining the three main types of property interest, it was necessary to understand the relevant legal framework and restrictions that affect the interest being valued. The Board discussed this comment and felt that this was a critical part of any real estate valuation and therefore adjusted the overview section to incorporate a section on the relevant legal framework and restrictions towards the beginning of IVS 400.

Further, on the basis of suggestions of stakeholders, the Board felt the need to include the following Special Assumptions:

- a) That the interest is being valued without taking into account other existing interests, and
- b) That the property is free from contamination or other environmental risks.
- c) Market conditions at the time of the relevant transactions and how they differ from conditions at the valuation date.

The latest version of IVS (“IVS 2017”) marks a significant achievement towards building a consonance in valuation practices across the globe.

IVS 2017 serves as an important guidance for valuation professionals globally and will fortify consistency, transparency and confidence in valuations which play a crucial role in making investment decisions and financial reporting.

IVS 2017 is a recent initiative in the IVSC's mission to raise standards of international valuation practice as a core part of the financial system, for the benefit of capital markets and the public interest.

- v) **Development Property (IVS 410)** : The Board has changed the numbering of many of the asset standards to allow for more flexibility in future standard-setting activities. As a result, this standard, which was IVS 233 in IVS 2013 has been re-numbered to IVS 410.

Several stakeholders pointed out that property should be valued as development properties even when no redevelopment is contemplated provided redevelopment provides its highest and best use. The Board considered these comments and felt that they were valid and as such the standard was amended to note that development properties are defined as interests where redevelopment delivers the highest and best use, or where improvements are either being contemplated or are in progress at the valuation date.

A vital dimension that have been considered in the Standard after lot of deliberations is that the valuer is required to be careful when there was a degree of third party reliance, which may not always be known at the outset of valuation. The Board felt that this was true of any valuation and accepted its significance in case of valuing a development property, especially when revised valuations may be required for each stage of the development process and all the third parties may not be known at the outset of the engagement.

- vi) **Financial Instruments (IVS 500)** : In case of IVS 500, several respondents pointed out that the term "financial instruments" encompasses a wide variety of instruments including derivatives, contingent instruments, hybrid instruments, fixed income, and structured products. However, they noted that the standard primarily defined financial instruments in terms of equity instruments. The Board agreed that the term "financial instruments" is broad and encompasses a wide range of instruments. While they did not believe IVS 500 could accurately present an exhaustive list of financial instruments, they agreed that the existing description of what constitutes a financial instrument was too limited and expanded upon it accordingly.

SUMMARY

Guidance for Valuation of Public Sector Undertakings- Based on the recommendations of the Disinvestment Commission and in keeping with the best market practices the following four methodologies are being used for valuation of PSUs:

- a) Discounted Cash Flow (DCF) Method.
- b) Balance Sheet Method.
- c) Transaction Multiple Method.
- d) Asset Valuation Method.

While the first three are business valuation methodologies generally used for valuation of a going concern, the last methodology would be relevant only for valuation of assets in case of liquidation of a company. In addition, in case of listed companies, the market value of shares during the last six months is also used as an indicator. However, most PSU stocks suffer from low liquidity and the price determination may not be always efficient. Moreover, there could be increased trading activity after announcement of the disinvestment, which could be on account of high market expectation of the bid price and even based on malafide intent. This could lead to the price being traded up to unsustainable levels, which is not desirable.

Valuation Methods for Indian Market

Start-up Valuations - Asset approach; Summation of the values of Principals and Employees; Early customers and contracts in progress; Earnings multiple approach

Real Estate Valuations- Income method; Cost Method; Residual Method; Discounted Cash Flow; Profits Method

Indian Valuation Standards

- IVS 101 Definitions
- IVS 102 Valuation Bases
- IVS 103 Valuation Approaches and Methods
- IVS 201 Scope of Work, Analyses and Evaluation
- IVS 202 Reporting and Documentation
- IVS 301 Business Valuation
- IVS 302 Intangible Assets
- IVS 303 Financial Instruments

SELF TEST QUESTIONS

- Q1. Explore various valuation techniques used in the following sectors of India-
- i) Automobile
 - ii) Steel
 - iii) Cement
 - iv) Coal
 - v) IT & ITES
- Q2. Considering any of the sector mentioned in Q1, apply Indian Valuation Standards and find out the impact on valuation.
- Q3. What are the DCF Valuation Fundamentals?
- Q4. What are the problems in DCF Valuation?
- Q5. If a house produces a net income of Rs. 10,000/- p.a. and the approximate rate of return is 10%, what sum will an investor like to pay for acquiring the property?
- Q6. It is estimated that the cost of repairs of a house would be Rs. 50,000/- The tenant agrees to pay 50% of the amount without any other condition and paid his share. The owner fails to repair, the house in two years and the cost of repairs rises to Rs. 65,000/- and as agreed earlier, the tenant again agrees to share 50% of the cost. Calculate what balance amount the tenant would have to pay, the prevailing rate of interest being 10%.

LIST OF FURTHER READINGS

- 1) The Intelligent Investor by Benjamin Graham
- 2) Determining Value: Valuation Models and Financial Statements by Richard Barker, Financial Times, Prentice Hall

Lesson 5

Business Valuation Methods

LESSON OUTLINE

- Introduction
- Meaning of valuation
- Objective and reasons for valuation
- Principles influencing valuation
- Fundamental ethical principles
- Preliminary steps in valuation
- Steps in Valuation
- Detailed steps in valuation
- Methods of valuation
 - Asset based valuation
 - Earning based valuation
 - Market based valuation
- Other Methods of valuation
 - Economic value method
 - Discounted cash flow method
 - Dividend discount model
- Option valuation
- Registered Valuer
- Valuation Standards
- Valuation Report
- SUMMARY
- SELF TEST QUESTIONS

LEARNING OBJECTIVES

As per the Company Act, 2013, A Company Secretary is now authorised to act as a registered valuer for valuation of business. And hence, it is important to know the various methods of valuation.

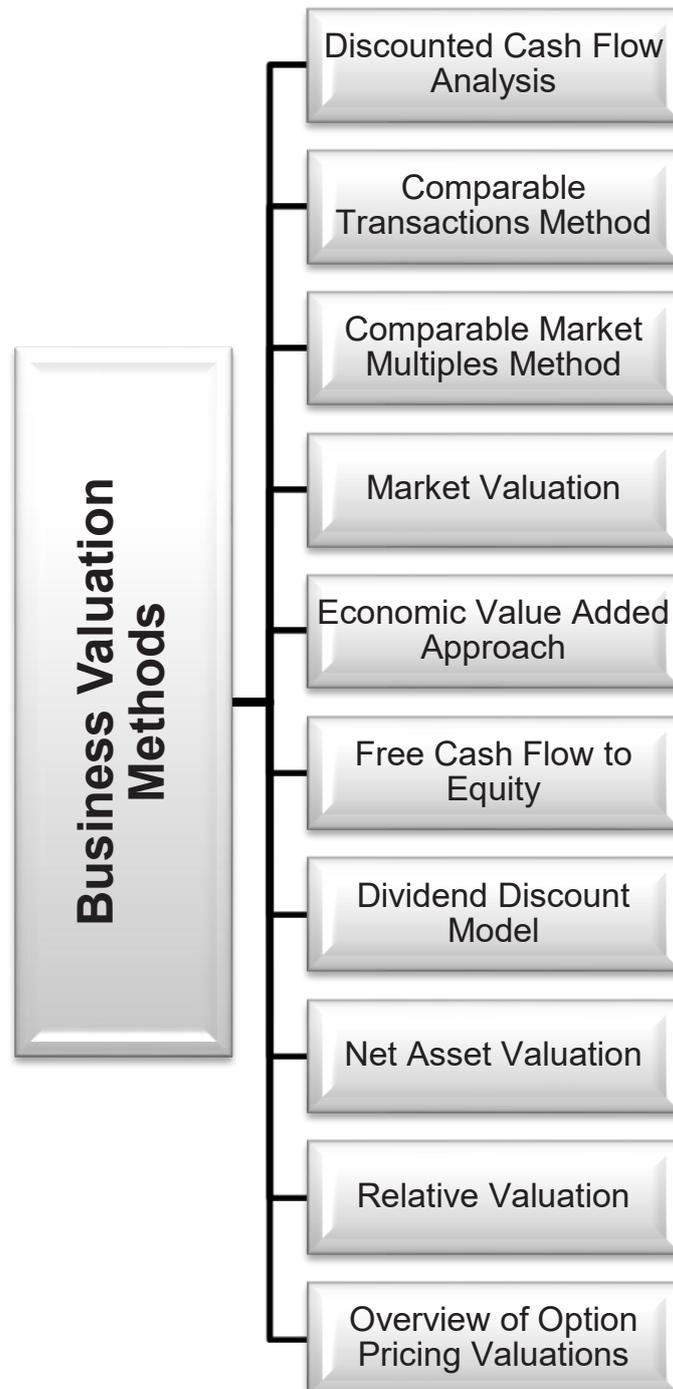
The valuation is required in various situations like mergers, amalgamation, IPO, issue of ESOP etc. And hence a Company Secretary should have idea on how these valuations are carried out.

The objective of the valuation is to ensure that right values are calculated by a third party hence leaving no room of doubts in the minds of buyer and seller.

After reading this study you should be able to have a complete idea on various techniques used for valuation.

ORIENTATION

This study lesson has been considered compulsory in view of the various significant business valuation methods that have been given due emphasis. Since valuation and valuation methods are intertwined so without being conversant with the valuation approaches one cannot undertake valuation assignments merely on the basis of theoretical concepts.

FAMILY TREE OF CONCEPTS

INTRODUCTION

“Managers and investors alike must understand that accounting numbers are the beginning, not the end, of business valuation.”- Warren Buffet

Valuation is carried to find out the worth of the organisation. Valuation of Business is carried out for various reasons such as their purchase and sale, obtaining a listing and capital gains tax computations etc.

Valuation is more difficult for unlisted companies because listed companies have a quoted share price. However, even listed companies can present valuation challenges for example when one is trying to predict the effect of a takeover on the share price.

Knowing what business is worth and what determines its value is prerequisite for intelligent decision-making. Corporate valuations form the basis of corporate finance activity including capital raising, M&A and also to meet regulatory / accounting requirements or for voluntary purpose.

Business Valuation is the process of determining the “Economic Worth” of a company based on its Business Model under certain assumptions and limiting condition and subject to data available on the valuation date. It is an important concept in corporate finance and business management. Supposing a business is for sale, how does one know what is the real value that business is worth? More basically, how does a business owner know the net value of his business, or how is valuing a business for sale accomplished?

Meaning of Business Valuation

Business valuation is a process to estimate the economic value of an owner’s interest in a business. Valuation is used by financial market participants to determine the price they are willing to pay or receive to effect a sale of a business.

Objectives of valuation

Brain Capsule 1

The United East India Company was the first company to do valuation and come out with an IPO

Objective of valuation	<ol style="list-style-type: none"> 1. To ensure that valuation is carried out without any doubts or controversy 2. To promote ‘best practices’ and fairness in valuation services 3. To promote credibility, relevancy & transparency of valuation information. 4. To enhance quality, consistency, comparability and uniformity of valuation practice 5. To cover valuation of all assets, liabilities and businesses (cash flows) 6. To enhance reliance on the valuation amongst stakeholder 7. To improve corporate governance 8. To ensure transaction is concluded at reasonable price 9. To inform the internal stakeholders 10. Comparing with similar enterprises to understand management efficiency
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Areas where valuation is required

Mergers and Acquisitions	Valuation is an important aspect in M & A. It not only assists business owners in determining the value of their business, but also help them maximize value when considering a sale, merger, acquisition, joint venture, or strategic partnership.
Succession Planning	Succession to family members: In planning for the transfer of family business to the next generation. Succession to employees: for many closely held businesses, the sale of the business to one or more key employees is often a viable succession strategy. Succession to outside parties: It consist of mergers, acquisitions, purchase and sale of businesses.
Going Public	In general, when a new company goes for an Initial Public Offering (IPO), it is doing that in order to generate capital for growing its business. In such a circumstance, a question arises as to how to evaluate the fair value of such a stock. The Indian Capital Market follows a free pricing regime and thus the accurate pricing of an IPO is of immense importance.
Dispute Resolution	Valuations are an increasingly important aspect of many commercial disputes. Before deciding how to manage a dispute, it is necessary to determine the likelihood of a successful outcome and the potential stake involved. Judicial precedents are also available that affect the selection of Valuation methodologies and applicability of discounts/premiums.
Voluntary Assessment	At times, the management wants to know the true value and fair value of the business for which they undertake the exercise of voluntary assessment for internal management purpose and future decision-making.

Valuation Perspectives

Owners' Perspective

- How much is my company worth ?

Shareholder's Perspective

- How much should I pay for the share price?

Investor's Perspective

- How much should I pay in order to acquire this company?

Principles of Valuation

1. Valuation is done at specific point of time: The Valuation keeps changing with time and hence any valuation is carried out only at a specific point of time.
2. A company's valuation is based principally on its ability to generate future cash flows : Any company which has better future prospects would have high valuation based on their future earning capacity.
3. Market forces tend to drive the rate of return required by prospective buyers in the marketplace. These market forces include:
 - a. General economic conditions, particularly borrowing rates and access to capital
 - b. The type of buyers, including financial and strategic buyers, in the marketplace and their investment
4. Value may be influenced by underlying Net Tangible Assets
5. Value is influenced by liquidity.

Fundamental Ethical Principles

The fundamental ethical principles that all *valuers* are required to observe are:

(a) **Integrity and Fairness**

The *valuer* should be straightforward and honest in all professional and business relationships and maintain the highest standards and integrity and fairness.

(b) **Objectivity**

The *valuer* should not allow bias, conflict of interest or undue influence of others to override professional or business judgments.

(c) **Professional Competence and Due Care**

The *valuer* should maintain professional knowledge and skill at the level required to ensure that an intended user receives competent professional service based on current developments in practice, legislation and techniques and act diligently and in accordance with applicable technical standards and code of conduct.

(d) **Confidentiality**

The *valuer* should respect the confidentiality of information acquired as a result of professional and business relationships and, therefore, not disclose any such information to third parties without proper and specific authority, unless there is a legal or professional right or duty to disclose, nor use the information for his personal advantage or third parties.

(e) **Professional Behaviour**

The *valuer* should comply with relevant laws and regulations and avoid any conduct that disrepute to the profession.

Preliminary Steps in Valuation

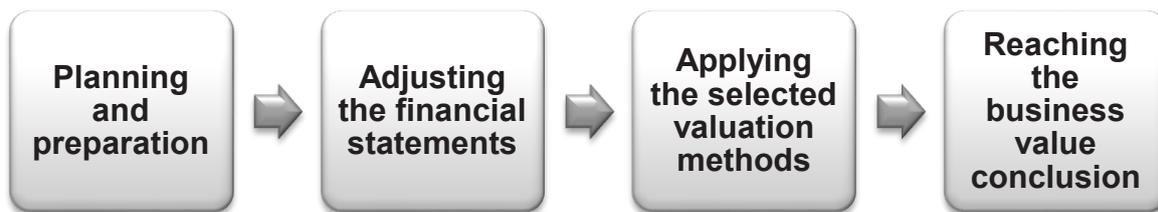
A business/corporate valuation involves analytical and logical application/analysis of historical/future tangible and intangible attributes of business. The preliminary study to valuation involves the following aspects:

1. Analysis of business history
2. Profit trends

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3. Goodwill/Brand names in the market
4. Identifying economic factors directly affecting business
5. Study of exchange risk involved
6. Study of employee morale
7. Study of market capitalization aspects
8. Identification of hidden liabilities through analysis of material contracts

Steps in Business Valuation



The following aspects would be considered by the valuer :

1. Defining the standards and premises
2. Analysing the subject and gathering information
3. Adjusting the financial statements appropriately
4. Applying valuation method
5. Preparation of a draft report and maintaining appropriate documents

Case Study 1

Top factors for Flipkart's enterprise valuation

From closely looking at the books of Flipkart to getting the right numbers for all the assets and liabilities of the company.

Here is a look at the top factors including future cash flow and various contingent liabilities that Walmart must have at the top of its mind before agreeing on the valuation of India's home grown ecommerce poster boy.

Cash burn

The first and foremost concern of any investee company is ROI. While investing in startups is a high risk business, Flipkart is a unicorn and has a stabilised market share in the online retail market.

Flipkart is a 10-yearold company and is yet to make profit. Flipkart Ltd reported a 68 percent jump in losses to Rs 8,771 crore for the year ended March 2017 from the previous year. Though revenue at Flipkart group rose by 29 percent to Rs 19,854 crore.

While Walmart will definitely expect Flipkart to be profitable in the long term, its ROI will be hugely based on the value of the company, at least in the medium term to provide it a window to exit either during an IPO or before that.

So it's logical to expect Walmart to be burning the midnight oil now in the US and find a proper valuation, than burning cash in India in its fight against Amazon.

Flipkart's penetration in the electronics market

Fashion and electronics are the two largest drivers for Flipkart. One of the company's strategies is to dominate the Indian ecommerce market is to expand its smartphone sales. Winning the smartphone battle has a spin-off effect of making the smartphone customer a regular customer. Flipkart's initial target, is to take 40 percent of all smartphone sales in the country by 2020, from the current 25 percent, Ajay Yadav, Flipkart's vice president for mobiles and large appliances, said recently. Talking about the large appliances and television segments, Flipkart recently reported, "We are on track to hit the Rs 5,000 crore GMV mark in television this year. We are targeting Rs 9,000 crore in large appliances overall."

Tax and regulatory issues

The government rules allows 100 percent foreign direct investment (FDI) in online retail of goods and services under the so-called "marketplace model" through the automatic route. But it also prohibits marketplaces from offering discounts and capping total sales originating from a group company or any one vendor at 25 percent. But there are still allegations that these marketplaces are flouting FDI rules and creating an unequal playing field. Recently the handset makers' lobby Indian Cellular Association (ICA) urged the Commerce Minister Suresh Prabhu to take action against Amazon and Flipkart, alleging that the ecommerce platforms were violating foreign direct investment (FDI) rules by offering discounts - directly or indirectly - on mobile phones and other products through intermediaries or partner companies. Heeding to their request, the Ministry of Commerce & Industry has asked the RBI and the ED to look into the allegations. The war on discounts doesn't stop here. Reports of Flipkart having an issue with the Income tax department came to light recently. The Bengaluru I-T office had asked Flipkart to reclassify marketing expenditure as capital expenditure. Flipkart has appealed against the Rs 110 crore tax demand for the financial year 2015-16 following the tax department's order to reclassify marketing expenses and discounts as capital expenditure.

Assets

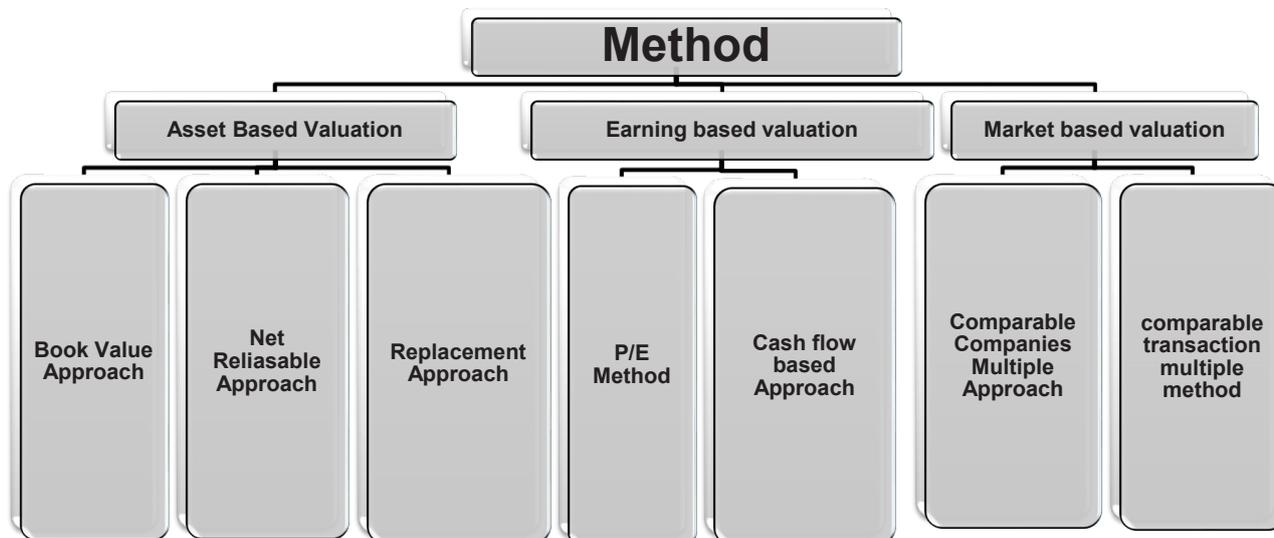
A marketplace is an asset light model. But Flipkart has its own companies that are sellers in the platform. The other assets are land, building, people, and intangibles. Flipkart has around 7,600 employees, including those in functions like warehouse, and logistics. About 6,800 employees have now shifted and are working in the new Flipkart campus in Bengaluru, spread over 8.3 lakh sq ft, with a seating capacity of over 7,300 people. It is not clear whether the new facility is a leased or an acquired property. The company also has plans to acquire a 100-acre plot on the outskirts of Bengaluru to set up a logistics park spread over 4.5 million square feet.

There are multiple other factors that will directly or indirectly affect the final valuation. Flipkart's potential growth in other verticals including the digital payment arm, PhonePe is in direct competition with Alibaba and Softbank backed Paytm.

Methods of Valuation

A number of business valuation models can be constructed that utilize various methods under the broad business valuation approaches. Most treatises and court decisions encourage the valuer to consider more than one method, which must be reconciled with each other to arrive at a value conclusion. Understanding of the internal resources and intellectual capital of the business being valued is as important as the economic, industrial and social environment. The choice of the appropriate valuation approach (or approaches) to be used in a given valuation project is based on the judgment of the valuer. The valuer's choice of methods is determined by the characteristics of the business to be valued, the purpose and use of the valuation and its report, the pattern of historical performance and earnings of the subject company, the company's competitive market position, experience and quality of management, the availability of reliable information requisite to the various valuation methods, the marketability of equity ownership interest to be valued, and others.

BUSINESS VALUATION METHODS



1. Asset Based Approach

The most commonly used asset-based approach to valuation is the Adjusted Net Asset Method. The starting point is to have the balance sheet of the company and look for the values of assets and liabilities. The primary emphasis is placed upon the fair market value of the assets and liabilities of a business. As a result, this approach uses various methods that consider the value of individual assets and liabilities including intangible assets. The most well-known method in this approach relies upon reported balance sheet assets and liabilities generally termed as book value. It should be recognized, however as per book value concept assets are reported in accordance with various accounting conventions that may or may not accurately reflect fair market value. This balance sheet-focused method is used to value a company based on the difference between the fair market value of its assets and liabilities

Here, the business is estimated as being worth the value of its net assets.

$$\text{Value of the business} = \text{Value of Assets} - \text{Value of liability}$$

However, there are three common ways of valuing its net assets: book values, net realisable values and replacement values.

- a. **The book value approach:** The book value of non-current assets is based on historical (sunk) costs and relatively arbitrary depreciation. These amounts are unlikely to be relevant to any purchaser (or seller). The book values of net current assets (other than cash) might also not be relevant as inventory and receivables might require adjustment.
- b. **Net realisable values approach:** This amount would represent what should be left for shareholders if the assets were sold off and the liabilities settled. However, if the business being sold is successful, then shareholders would expect to receive more than the net realisable value of the net assets because successful businesses are more than the sum of their net tangible assets: they have intangible assets such as goodwill, know how, brands and customer lists – none of which is likely to be reflected in the net realisable value of the assets less liabilities. Net realisable value therefore represents a ‘worst case’ scenario because, presumably, selling off the tangible assets would always be available as an option. The selling shareholders should therefore not accept less than the net realisable amount – but should usually hope for more.

- c. **Replacement values:** Once again, not of great practical benefit. The approach tries to determine what it would cost to set up the business if it were being started now. The value of a successful business using replacement values is likely to be lower than its true value unless an estimate is made for the value of goodwill and other intangible assets, such as brands. Furthermore, estimating the replacement cost of a variety of assets of different ages can be difficult.

Let us try to understand the model with the help of an example

Question 1

The following is the data of ABC Limited:

Non-current assets contain land and buildings that are valued Rs. 700,000 above their book value, and plant and machinery, which would sell for RS. 200,000 less than their book value. Inventory would sell for Rs. 400,000 and only Rs. 250,000 would be realised from receivables. Closure costs would add RS. 100,000 to liabilities.

Book Values	Amount (Rs. in 000)	Net Realisable values	Amount (Rs. in 000)
Non current assets	1000	(1000+700-200)	1500
Inventory	500	500-100	400
Receivables	300	300-50	250
Cash	400		400
Total	2200		2550
Share Capital	400		400
Reserves	900	(Balance)	1150
Bonds	400		400
Current liability	500	500+100	600
Total	2200		2250

The minimum amount that the shareholders should accept for this business is Rs. 2550000-1000000 =Rs. 1,550,000

Question 2

Balance sheets of Fair Deal Ltd. (FDL) and Genuine Cosmetics Ltd. (GCL) as on 31st March, 2013 i.e., the date on which the companies were amalgamated and a new company Well Worth Ltd (WWL) was formed are as follows:

Balance sheets as on 31st March, 2013

S.No		FDL	GCL
I	Equity and Liabilities Shareholders' funds	Rs.(000)	Rs.(000)
	Equity shares of Rs 10 each	6500	4500
	Reserves and Surpluses	3000	5000
	Current liabilities		

	Trade creditors and other liabilities	2000	1000
	Total	11500	10500
II	Assets		
	Non-Current Assets	8000	7500
	Current Assets	3500	3000
	Total	11500	10500

The fixed assets of FDL were valued at Rs 10,000 thousand and that of GCL were valued at Rs 9,000 thousand. WWL would issue the requisite number of equity shares of Rs 10 each at 50% premium to discharge the claim of equity shareholders of FDL and GCL. How many shares of WWL should be issued to takeover the business of the two merging companies?

Answer:

	FDL	GCL
	Rs. ('000)	Rs. ('000)
Non Current Assets	10,000	9,000
Add current assets	3500	3000
Less: Current Liabilities	(2,000)	(1,000)
Net Assets	11500	11000

Total Value of Net Assets= 11,500+11,000=22,500

WWL is issuing shares of Rs 10 each with 50% premium (i.e Rs 5 Premium on each share)

No. of shares to be issued by WWL Ltd. = 22,500/15=1,500 thousands shares.

1. Earning based approach

The Income based method of valuations is based on the premise that the current value of any business is a function of the future value that an investor can expect to receive from purchasing all or part of the business. In other words, the value of the business must be related to the profits it will earn and the cash it will generate in the future

The P/E ratio method is widely used in practice.

This method relies on finding listed companies in similar businesses to the company being valued (the target company), and then looking at the relationship they show between share price and earnings.

Using that relationship as a model, the share price of the target company can be estimated. P/E ratios The P/E ratio is the price per share divided by the earnings per share and shows how many years' worth of earnings are paid for in the share price.

The formula of P/E ratio is

P/E Ratio=Price/EPS

Lets try to understand this concept with the help of an example

Question 3

Let's say that the market value of a small chain of retail shops has to be estimated. The company has just has just enjoyed post tax earnings of Rs. 200,000, out of which it paid a dividend of Rs. 50,000. The first task is to identify three listed companies in the grocery business, then look at their published characteristics. For this illustration, three large quoted supermarket chains are D-Mart, V-Mart and Future Retail have been chosen. Let's assume that the P/E ratio of the companies was as under

Company	P/E Ratio
D- Mart	10.8
V-Mart	9.9
Future Retail	10.00

The above data is fictitious and created only for students understanding

The average P/E of the selected listed companies is calculated. Here it is 10.2, and this represents the relationship that quoted companies, in the supermarket industry, are showing between their earnings after tax and their market capitalisation (or between their earnings per share and their price per share). Remember, 10.2 means that anyone who buys a share is buying it for 10.2 times its last published earnings.

Therefore, as the target company's post tax earnings are Rs. 200,000, its market value would be estimated at $10.2 \times \text{RS. } 200,000 = \text{Rs. } 2,040,000$

Question 4

XYZ Limited is intending to acquire ABC limited by merger and the following information is available in respect of both the companies:

Particulars	XYZ limited	ABC limited
No. of equity shares	5,00,000	3,00,000
Profit after tax	25,00,000	9,00,000
Market price per share	21	14

1. Calculate the present EPS of both companies
2. Calculate Exchange ratio

EPS= Profit available to equity shareholders/No. of equity shares	$25,00,000/5,00,000= 5$	$9,00,000/3,00,000=3$
-------------------------------------------------------------------	-------------------------	-----------------------

Exchange ratio on the basis of EPS= $3/5= 0.6$

2. Market Based Valuation:

The market approach is a general way of determining a value indication of a business, business ownership interest, security or intangible asset by using one or more methods that compare the subject to similar businesses, business ownership interests, securities or intangible assets that have been sold

Market Approach refers to the notion of arriving at the value of a company by comparing it to the market value of similar publicly listed companies. The comparison is based on certain financial ratios or multiples, such as the price to book value, price to earnings, EV/EBITDA, etc., of the equity in question to those of its peers. This type of approach, which is popular as a strategic tool in the financial industry, is mainly statistical, based on historical

data, and current market sentiments.

This is also called as relative approach. This approach is based on the premise that the value of any asset can be estimated by analysing how the market prices 'similar' or 'comparable' assets.

The main assumption that is followed that it is difficult to estimate the intrinsic value of an asset, and therefore, the value of an asset is whatever the market is willing to pay for it.

Three frequently used market approach valuation methods for intangible assets are:

1. Comparable uncontrolled transactions method (which is based on arm's length sales or licenses of comparable intangible assets)
2. Comparable profit margin method (which is based on comparison of the profit. margin earned by the subject entity that owns or operates the intangible asset to profit margins earned by comparable companies)

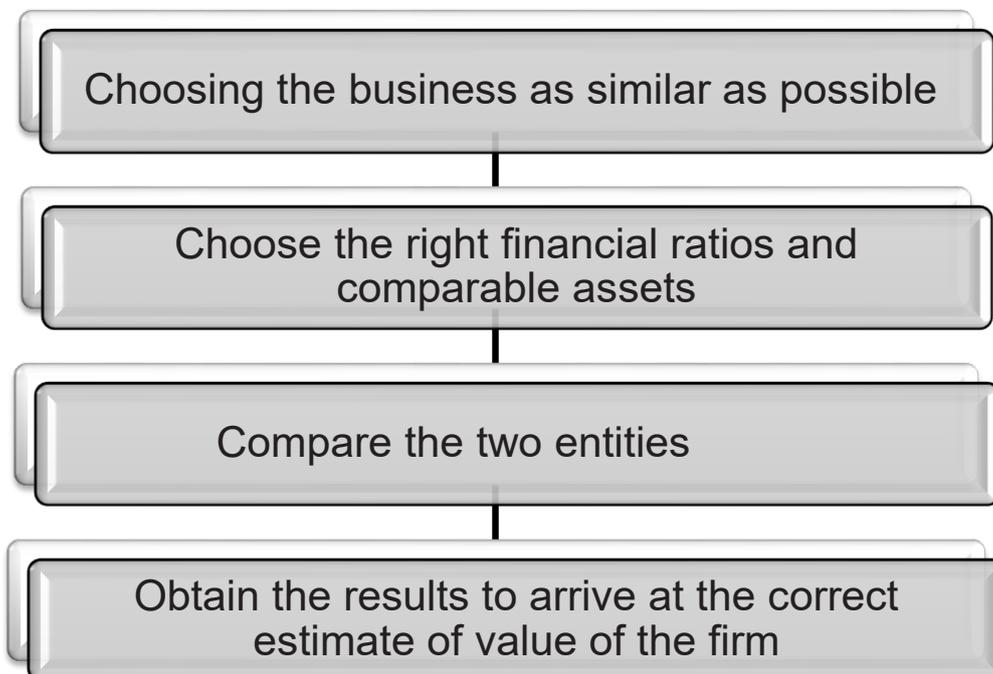
Brain Capsule 2

a. Almost 85% of equity research reports are based upon a multiple and comparables.

A relative valuation model is a business valuation method that compares a firm's value to that of its competitors to determine the firm's financial worth.

The core idea of relative valuations is to convert the values of companies sharing similar attributes to comparable multiples and then seeing how those stocks stand in relation to their peers.

Steps of Relative Valuation



Comparisons are normally made through the use of valuation ratios. The computation and use of such ratios should provide meaningful insight about the value of the subject, considering all relevant factors.

The most commonly used multiples are:

- a. Revenue or sales multiples

- b. EBITDA multiples
- c. Operational multiples
- d. Operating free cash flow multiples
- e. Earnings multiples
- f. Book value multiples

Following methods are used for valuation under this approach:

- (i) **Comparable companies multiple approach** – Market multiples of comparable listed companies are computed and applied to the company being valued to arrive at a multiple based valuation.
- (ii) **Comparable transaction multiples method** – This technique is mostly used for valuing a company for M&A, the transaction that have taken place in the industry which are similar to the transaction under consideration are taken into account. For example if in past merger of A company has taken place and if current merger in consideration is same as of Company A that would be considered for meger of current company.
- (iii) **Market value method** - The Market value method is generally the most preferred method in case of frequently traded shares of companies listed on stock exchanges having nationwide trading as it is perceived that the market value takes into account the inherent potential of the company.

Market Value:

The starting point for determining **market multiples** is the market values of companies whose shares are listed and hence quoted on a stock exchange.

Publicly listed companies, those with shares listed on stock exchanges, have their share prices quoted by market makers whose job is to provide a market for shares. This gives an instant picture of a company's value. The market value of a company may be derived from multiplying the share price by the number of shares.

Limitations of Relative Valuation Methods

Because relative valuation using the multiples explained above is easy to calculate, no wonder that its use is so widespread. But because it is based on nothing more than casual observations of multiples based on stock prices (which are volatile and fluctuate according to the varying emotions of people involved in the markets), intrinsic value calculation using relative valuation can easily go awry.

Another serious drawback of relative valuation is that the same ease of pulling together a multiple and a group of comparable firms can also result in inconsistent estimates of value where key variables such as risk, growth, or cash flow potential are ignored.

But despite these negatives, relative valuation has some potential advantages over other valuation tools. First, a relative valuation is based upon a multiple and thus it can be calculated with few assumptions and more quickly than say a DCF valuation.

In conclusion, relative valuations must never be used in isolation to arrive at a company's intrinsic value. Instead, it must always be used in conjunction with other tools like DCF for a more accurate measurement of how much a company's shares are really worth.

Market based approach is not helpful in following situations:

1. When we need to do valuation of a division of the company
2. Where the shares are not traded or thinly traded
3. When there is an intention to liquidate and to realise assets and liabilities

Case Study 2

Valuation in case of merger of Vodafone and Idea

The valuation methods deployed by the appointed CA firms for the merger were as follows:

- a) Market Value method: The share price observed on NSE (National Stock Exchange) for a suitable time frame has been considered to arrive at the valuation.
- b) Comparable companies' market multiple method: The stock market valuations of comparable companies on the BSE and NSE were taken into account.
- c) NAV method: The asset based approach was undertaken to arrive at the net asset value of the merging entities as of 31st December 2016.

Surprisingly, the DCF method was not used for valuation purposes. The reason stated was that the managements to both Vodafone and Idea had not provided the projected (future) cash flows and other parameters necessary for performing a DCF based valuation.

The final valuation done using methods a to c gave a basis to form a merger based on the 'Share Exchange' method.

Above information extracted from: 'Valuation report' filed by Idea Cellular with NSE

OTHER METHODS OF VALUATION

1. Discounted Cash Flow (DCF)

It is one of the method of valuation which is used to calculate the present value of a firm by discounting the expected returns to their present value by using the weighted average cost of capital (WACC). DCF expresses the present value of the business as a function of its future cash earnings capacity.

In this method, the appraiser estimates the future free cash flows of any business. The future free cash flow is calculated after considering all operating expenses, taxes, and necessary investments in working capital and capital expenditure.

Valuing equity using the free cash flow to stockholders requires estimating only free cash flow to equity holders, after debt holders have been paid off. This method is more appropriate when future returns are expected to be substantially different from current operations. This method usually has two stages, the first stage involves a discreet forecast of future earnings or cash flow to be discounted to the present using a discount rate and the second stage involves the construction and discounting of a terminal value. The terminal value is determined when the entity's future return stream is expected to achieve stable long-term growth.

There are certain steps in performing a DCF valuation. These are:

The discounted cash flow (DCF) model is applied in the following steps:

1. Determine the time horizon.
2. Estimate the future cash flows of the target based on the assumption.
3. Estimate the terminal value of the target at forecast horizon.
4. Estimate the cost of capital appropriate for the target.
5. Discount the estimated cash flows to give a value of the target.

Limitation

In addition to being cumbersome and complex, a major disadvantage of this method of analysis is that the accuracy of values varies greatly based on the assumptions made, and the values are often expressed as a range.

Any small changes in inputs can lead to widely fluctuating results. However, the main advantage of DCF analysis lies in the fact that it is the closest to intrinsic stock value. It is also a futuristic and fundamental method of evaluation.

2. Economic Value Added Approach

Economic value added (EVA) is the economic profit by the company in a given period. It measures the company's financial performance based on the residual wealth calculated by deducting its cost of capital from its operating profit, adjusted for taxes on a cash basis.

It helps to capture the true economic profit of a company like we calculated the Economic Value Added of investing gold in the above .

The three main components of Economic Value Added (EVA) are:

1. Net Operating Profit After Tax
2. Capital Invested
3. WACC i.e. the Weighted Average Cost of Capital

Economic Value Added can be calculated with the help of the following formula:

Economic Value Added = Net Operating Profit After Tax – (Capital Invested x WACC)

Here, Capital Invested x WACC stands for the cost of capital. This cost is deducted from the Net Operating Profit After Tax to arrive at the economic profit or the residual wealth created by the organization.

Let's take a look at an example.

Assume that Company XYZ has the following components to use in the EVA formula:

Net Operating Profit After Tax = Rs. 3,380,000

Capital Investment = Rs. 1,300,000

WACC = .056 or 5.60%

EVA = Rs. 3,380,000 - (Rs. 1,300,000 x .056) = Rs. 3,307,200

Let us try to understand this concept with the help of another example.

Question 5

The balance sheet of ABC Ltd is as follows:

Non Current Assets	220
Current Assets	
Trade Receivables	880
Cash and cash equivalents	1000
	2000
Shareholders' funds	1200
Long Term Debt	200
Current Liabilities and Provisions	600
	2000

The shares are actively traded and the Current Market Price (CMP) is 25 per share. Shareholder funds represent 100 shares of 10 each and rest is retained earnings.

Solution

Shares outstanding	100
CMP	25
Market Capitalization	2500
Add: Debt	200
Less: Cash & Cash equivalents	1000
Enterprise Value (EV)	1700

3. Dividend Discount Model

It is a way of valuing a company based on the theory that a stock is worth the discounted sum of all of its future dividend payments. In other words, it is used to evaluate stocks based on the net present value of the future dividends.

Financial theory states that the value of a stock is the worth all of the future cash flows expected to be generated by the firm discounted by an appropriate risk-adjusted rate. We can use dividends as a measure of the cash flows returned to the shareholder.

Some examples of regular dividend paying companies are TCS, Infosys, Coal India etc. We can use Dividend Discount Model to value these companies.

The *dividend discount model (DDM)* seeks to estimate the current value of a given stock on the basis of the spread between projected dividend growth and the associated discount rate. The DDM calculates this present value in the following manner:

$$\text{Present Stock Value} = \text{Dividend}_{\text{Share}} / (R_{\text{Discount}} - R_{\text{Dividend Growth}})$$

In the DDM, a present stock value that is higher than a stock's market value indicates that the stock is undervalued and that it is a good time to purchase shares.

Question 6

XYZ declares a dividend of two rupees per share and is currently valued at Rs. 125 in the market.

Based on the stock's dividend history, a broker determines a dividend growth rate for the stock of five percent per year and a discount rate of seven percent. The present stock value is calculated as follows:

$$\text{Present Stock Value} = \text{Rs.2.00 per share} / (0.07 \text{ discount} - 0.05 \text{ dividend growth}) = \text{Rs. } 2.00 / 0.02 = \text{Rs. } 100$$

With a calculated present value of Rs. 100 against a market value of Rs. 125, stock XYZ is overvalued in this instance and represents an opportunity to sell.

Advantages

There are three major reasons why the dividend discount model is a popular valuation technique:

1. Simplicity of Calculations

Once investors know the variables of the model, calculating the value of a share of stock is very straightforward. It only takes a little of algebra to calculate the price of stock.

2. Sound and Logical Basis for the Model

The model is based on the premise that investors purchase stocks so that they can get paid in the future. Even though there are a number of reasons that investors may purchase a security, this basis is correct. If investors never received a payment for their security it wouldn't be worth anything.

3. The Process Can Be Reversed to Determine Growth Rates Experts Predicted

After looking at the price of a share of stock, investors can rearrange the process to determine the dividend growth rates that are expected for the company. This is useful if they know the predicted value of a share of stock but want to know what the expected dividends are.

Disadvantages

Although many investors still use the model, it has become a lot less popular in recent years for a variety of reasons:

- a) **Reflects Rationality, Not Reality:** The dividend discount model is based on the concept that investors invest in stocks that are most likely to pay them the most. Although this is the way that investors *should* behave, it does not always reflect the way investors *actually* behave. Many investors purchase stocks for reasons that have nothing to do with the company's financial position or its future dividend payments. Some investors purchase a company that happens to be more glamorous or interesting. This often explains why there is a discrepancy between a stock's intrinsic value and the actual market value.
- b) **Difficulty Determining the Variables that go into the Model:** The dividend discount model is simple to use. However, it is difficult to determine the numbers that go into it, which can yield inaccurate results. Companies are often unpredictable with their dividends, so forecasting them for this model is difficult. It is also very difficult to estimate the future sales of a company, which influences a corporation's abilities to maintain or grow dividends.
- c) **Dividends Aren't the Only Way Earnings Have Value to Investors:** Investors may be primarily concerned with dividends, but all earnings are still owned by investors. Dividends only represent the share of earnings that a corporation chooses to pay out. Retained earnings are still owed to investors and still count towards their wealth. This is why newer models evaluate the overall cash flow of a company, not the amount that is paid back to investors.
- d) **Investor Bias :** Investors have a tendency to confirm their own expectations. This means that most investors are going to come up with their own values for a stock since many of the inputs here are somewhat subjective. Only those who can force themselves to be objective are likely to find accurate variables for the model.

4. Sensitive Valuation Model

This model is very sensitive to small changes in input variables. Therefore, it can be easy to accidentally identify a security as being over priced or under priced if you are slightly off with your estimate of specific input.

5. Useless for Valuing Stocks with No Current or Near-Future Dividend Payments

As mentioned earlier, investors can only receive value from a company that will pay them dividends at some point. However, some companies don't currently offer dividends at a given time and aren't expected to in the near future. A decade ago, Microsoft had never paid a dividend, but was one of the most successful stocks ever. Investors knew the value behind the company and that they could receive dividends later on. However, the dividend discount model would have been a useless way to try to value the stock.

OVERVIEW OF OPTION PRICING VALUATIONS

Option pricing refers to the amount per share at which an option is traded.

Options are **derivative** contracts that give the holder (the “buyer”) the right, but not the obligation, to buy or sell the underlying instrument at an agreed-upon price on or before a specified future date.

Although the holder of the option is not obligated to exercise the option, the option writer (the «seller») has an obligation to buy or sell the underlying instrument if the option is exercised.

There are two factors which determine the price of option:

1. Intrinsic Value: The *intrinsic value* is the difference between the underlying spot price and the strike price, to the extent that this is in favour of the option holder. For a call option, the option is in-the-money if the underlying spot price is higher than the strike price; then the intrinsic value is the underlying price minus the strike price. For a put option, the option is in-the-money if the *strike* price is higher than the underlying spot price; then the intrinsic value is the strike price minus the underlying spot price. Otherwise the intrinsic value is zero.

In summary, intrinsic value:

= current stock price – strike price (call option)

strike price – current stock price (put option)

2. Time value

The option premium is always greater than the intrinsic value. This extra money is for the risk which the option writer/seller is undertaking. This is called the Time value.

Time value is the amount the option trader is paying for a contract above its intrinsic value, with the belief that prior to expiration the contract value will increase because of a favourable change in the price of the underlying asset. The longer the length of time until the expiry of the contract, the greater the time value. So,

Time value = option premium – intrinsic value

Other factors affecting premium

There are many factors which affect option premium. These factors affect the premium of the option with varying intensity. Some of these factors are listed here:

- Price of the underlying: Any fluctuation in the price of the underlying (stock/index/commodity) obviously has the largest effect on premium of an option contract. An increase in the underlying price increases the premium of call option and decreases the premium of put option. Reverse is true when underlying price decreases.
- Strike price: How far is the strike price from spot also affects option premium. Say, if NIFTY goes from 5000 to 5100 the premium of 5000 strike and of 5100 strike will change a lot compared to a contract with strike of 5500 or 4700.
- Volatility of underlying: Underlying security is a constantly changing entity. The degree by which its price fluctuates can be termed as volatility. So a share which fluctuates 5% on either side on daily basis is said to have more volatility than e.g. stable blue chip shares whose fluctuation is more benign at 2–3%. Volatility affects calls and puts alike. Higher volatility increases the option premium because of greater risk it brings to the seller.
- Payment of Dividend: Payment of Dividend does not have direct impact on value of derivatives but it does have indirect impact through stock price. We know that if dividend is paid, stock goes ex-dividend therefore price of stock will go down which will result into increase in Put premium and decrease in Call premium.

Apart from above, other factors like bond yield (or interest rate) also affect the premium. This is because the money invested by the seller can earn this risk free income in any case and hence while selling option; he has to earn more than this because of higher risk he is taking.

Pricing models

Because the values of option contracts depend on a number of different variables in addition to the value of the underlying asset, they are complex to value.

Amongst the most common models are:

- Black–Scholes model
- Lattice models: Binomial options pricing model; Trinomial tree
- Monte Carlo option model
- Finite difference methods for option pricing

The Black-Scholes formula (also called Black-Scholes-Merton) was the first widely used model for option pricing. It's used to calculate the theoretical value of European-style options using current stock prices, expected dividends, the option's strike price, expected interest rates, time to expiration and expected volatility.

The formula, developed by three economists – Fischer Black, Myron Scholes and Robert Merton – is perhaps the world's most well-known options pricing model. It was introduced in their 1973

Black-Scholes is a pricing model used to determine the fair price or theoretical value for a call or a put option based on six variables such as volatility, type of option, underlying stock price, time, strike price, and risk-free rate. The quantum of speculation is more in case of stock market derivatives, and hence proper pricing of options eliminates the opportunity for any arbitrage. There are two important models for option pricing – Binomial Model and Black-Scholes Model. The model is used to determine the price of a European call option, which simply means that the option can only be exercised on the expiration date.

The Black-Scholes model makes certain assumptions:

- The option is European and can only be exercised at expiration.
- No dividends are paid out during the life of the option.
- Markets are efficient (i.e., market movements cannot be predicted).
- There are no transaction costs in buying the option.
- The risk-free rate and volatility of the underlying are known and constant.
- The returns on the underlying are normally distributed.

$$d_1 = \frac{\ln\left(\frac{S}{X}\right) + \left(r + \frac{v^2}{2}\right)t}{v\sqrt{t}}$$

$$d_2 = d_1 - v\sqrt{t}$$

The variables are:

S = current stock price

X = strike price of the option

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t = time remaining until expiration, expressed as a percent of a year

r = current continuously compounded risk-free interest rate

v = annual volatility of stock price (the standard deviation of the short-term returns over one year).

ln = natural logarithm

N(x) = standard normal cumulative distribution function

e = the exponential function

Valuation by Registered Valuer

Registered Valuer is one among the many new concepts introduced by the Companies Act, 2013 which provides for a proper mechanism for valuation of the various assets and liabilities related to a company and to standardize the procedure thereof.

Registered Valuer means a person registered as a Valuer under Chapter XVII of the Act.

A person who is registered as a Registered Valuer in pursuance of Section 247 of the Act with the Central Government and whose name appears in the register of Registered Valuers maintained by the Central Government or any authority, institution or agency, as may be notified by the Central Government only can act as a registered valuer.

As per Section 247 of the Act –

- (1) Where a valuation is required to be made in respect of any property, stocks, shares, debentures, securities or goodwill or any other assets (herein referred to as the assets) or net worth of a company or its liabilities under the provision of this Act, it shall be valued by a person having such qualifications and experience and registered as a valuer in such manner, on such terms and conditions as may be prescribed and appointed by the audit committee or in its absence by the Board of Directors of that company.

Further, in exercise of the powers conferred by Section 458 of the Companies Act, 2013 (18 of 2013), the Central Government hereby delegates the powers and functions vested in it under section 247 of the said Act to the Insolvency and Bankruptcy Board of India, subject to the condition that the Central Government may revoke such delegation of powers or it may exercise the powers under the said section, if in its opinion such a course of action is necessary in the public interest.

- (2) The valuer appointed shall, –
 - (a) make an impartial, true and fair valuation of any assets which may be required to be valued;
 - (b) exercise due diligence while performing the functions as valuer;
 - (c) make the valuation in accordance with such rules as may be prescribed; and
 - (d) not undertake valuation of any assets in which he has a direct or indirect interest or becomes so interested at any time during or after the valuation of assets. In this regard, it is pertinent to peruse Section 74 of Companies (Amendment) Act, 2017 (Corresponding Section 247- Valuation by Registered Valuers as per Companies Act, 2013) provide that the restriction on appointment of a registered valuer by providing that registered valuer has been diluted can be appointed for valuation of an asset in which he has a direct or indirect interest or becomes so interested during a period of three years prior to appointment as valuer or three years after valuation of assets.
- (3) If a valuer contravenes the provisions of this section or the rules made there under, the valuer shall be punishable with fine which shall not be less than twenty-five thousand rupees but which may extend

to one lakh rupees: Provided that if the valuer has contravened such provisions with the intention to defraud the company or its members, he shall be punishable with imprisonment for a term which may extend to one year and with fine which shall not be less than one lakh rupees but which may extend to five lakh rupees.

- (4) Where a valuer has been convicted under sub-section (3), he shall be liable to –
- (i) refund the remuneration received by him to the company; and
 - (ii) pay for damages to the company or to any other person for loss arising out of incorrect or misleading statements of particulars made in his report.

EFFECT OF VALUATION BY EXPERTS

- It is well said that the valuation of shares is a technical matter, requiring considerable skill and expertise.
- If the same has been worked out and arrived at by experts then the same should be accepted, more so, if the same has the approval of the shareholders. That is to say, where the valuation done by the company's auditors is approved by the majority of shareholders and is also confirmed by eminent experts, who are appointed by the Tribunal to examine the valuation so made, as fair, and the valuation is not shown to be unfair or unjust, it would be extremely difficult to hold that the valuation so made is unfair
- The Tribunal while approving the scheme of merger or amalgamation does not look into the basis of fixing of exchange ratio in great detail. If a Registered Valuer has given the exchange ratio and the same is accepted by the requisite majority of the shareholders, the Tribunal will only see whether there is any manifest unreasonableness or manifest fraud involved in the matter, they would not question on the exchange ration otherwise.
- Thus, now, the law has been well settled by the Supreme Court in **Miheer H. Mafatlal** it was held that if the exchange ratio has been worked out by a recognised firm of chartered accountants who are experts in the field of valuation, and if no mistake can be pointed out in the said valuation, it is not for the court to substitute its exchange ratio, especially when the same has been accepted without demur by the overwhelming majority of the shareholders of the two companies or to say that the shareholders in their collective wisdom should not have accepted the said exchange ratio on the ground that it will be detrimental to their interest.
- It is not the part of the judicial process, said the Supreme Court in *Hindustan Lever Employees' Union v. Hindustan Lever Ltd.*, to examine entrepreneurial activities to ferret out flaws. The court is least equipped for such oversights, nor indeed is it a function of the judges in our constitutional scheme. It cannot be said that the internal management, business activity or institutional operation of public bodies, can be subjected to inspection by the court. To do so is incompetent and improper and, therefore, out of bounds.
- Where the determination of the market price has been entrusted to a reputed valuer, there is no reason to doubt about his competence unless mala fides are established against him. Allegations of mala fides are easy to make but difficult to substantiate. Unless the person who challenges the valuation satisfies the court that the valuation arrived at is grossly unfair, the court will not disturb the scheme of amalgamation which has been approved by the shareholders of two companies, who are, by and large well informed persons of commercial world. The only ground on which the valuation of the expert can be set aside is presence of fraud or mala fides on the part of the experts.

Valuation Standards

One of the most critical areas in finance is Valuation. It plays a key role in many areas of finance such as buy/sell, solvency, merger and acquisition. It also plays an important role in the Insolvency Resolution regime where

Liquidation value has to be ascertained by Resolution professional through the Registered Valuers.

To standardise the various principles, practices and procedures followed by registered valuers/ valuation professionals in valuation of assets and liabilities, Valuation Standards Board of the Institute of Chartered Accountants of India has formulated the Draft Indian Valuation Standards.

At this juncture, it is important to refer Rules, 8, 18 and 19 of the Companies (Registered Valuers and Valuation) Rules, 2017.

(a) Rule 8 (Refusal to grant certificate):

1) If, after considering an application made under Rule 7, the Registration Authority is of the prima facie opinion that the registration ought not be granted, it shall communicate the reasons for forming such an opinion within forty-five days of receipt of the application, excluding the time given by it for removing the deficiencies, presenting additional documents or clarifications, or appearing in person, as the case may be.

Rule 7 deals with Application for certificate of registration (for more details, please refer to http://www.mca.gov.in/Ministry/pdf/Companies_Registered_Valuers_Rules_2017.pdf)

2) The applicant shall submit an explanation as to why his/its application should be accepted within fifteen days of the receipt of the communication under subrule (1), to enable the Registration Authority to form a final opinion.

3) After considering the explanation, if any, given by the applicant under sub- rule (2), the Registration Authority shall communicate its decision to-

- (a) accept the application, along with the certificate of registration, or
- (b) reject the application by an order, giving reasons thereof within thirty days of receipt of explanation.

(b) Rule 18 (Valuation Report)

The valuer shall, in his/ its report, state the following:-

- (a) background information of the asset being valued;
- (b) purpose of valuation and appointing authority;
- (c) identity of the valuer and any other experts involved in the valuation;
- (d) disclosure of valuer interest/conflict, if any;
- (e) date of appointment, valuation date and date of report;
- (f) sources of information;
- (g) procedures adopted in carrying out the valuation;
- (h) valuation methodology;
- (i) major factors that influenced the valuation;
- (j) conclusion; and
- (k) caveats, limitations and disclaimers

(c) Rule 19 (Cancellation or suspension of certificate of registration or recognition)

The Registration Authority may cancel or suspend the registration of a valuer or recognition of a valuation professional organisation –

- (a) in public interest; or

- (b) on violation of the provisions of the Act, these Rules or any condition of registration or recognition, as the case may be;

In the manner prescribed in Rule 20. For more details, please refer to http://www.mca.gov.in/Ministry/pdf/Companies_Registered_Valuers_Rules_2017.pdf

Summary of Valuation Report

A summary report is structured to provide an abridged version of the information that would be provided in a detailed report, and therefore, need not contain the same level of detail as a detailed report. However, a summary report should, at a minimum, include the following:

1. Identification of the subject being valued;
2. Description of the interest being valued;
3. Ownership size, nature, restrictions and agreements;
4. Valuation date
5. Report date;
6. Purpose and use of the valuation;
7. Intended users of the valuation
8. Type of report issued
9. Definition of the standard
10. Identification of the premise of value;
11. Valuation approaches and method(s) utilized by the Valuer;
12. Historical financial statement summaries, when applicable;
13. Identification of the assumptions, limiting conditions and scope limitations;
14. Reliance on a specialist;
15. Jurisdictional exceptions and requirements;
16. Limitations on use of the report – all valuation services vary as to specific assumptions, limiting conditions and scope, therefore, the Valuer must identify material matters considered;
17. Sources of information;
18. A statement of Financial Interest;
19. Whether Valuer is obligated to update the report;
20. Disclosure of any contingency fee;
21. Qualifications of Valuer; and
22. Disclosure of subsequent events in certain circumstances
23. Responsible Valuer signature – the Valuer who has primary responsibility for the determination of value must sign or be identified in the report;

iv) In exercise of the powers conferred by section 24T read with section 469 of the Companies Act, 2013 (18 of 2013), the Central Government hereby makes the following rules further to amend the Companies (Registered Valuers and Valuation) Rules, 2017, namely:

1. (1) These rules may be called the Companies (Registered Valuers and Valuation) Fourth Amendment Rules, 2018.

(2) They shall come into force on the date of their publication in the Official Gazette.

2. In the Companies (Registered Valuers and Valuation) Rules, 2017 (hereinafter referred to as “the said rules”), in rule 1,

(a) for the marginal heading, the following marginal heading shall be substituted, namely:

“Short title, commencement and application”;

(b) after sub-rule (2), the following sub-rule shall be inserted, namely:

“(3) These rules shall apply for valuation in respect of any property, stocks, shares, debentures, securities or goodwill or any other assets or net worth of a company or its liabilities under the provision of the Act or these rules.

Explanation.- It is hereby clarified that conduct of valuation under any other law other than the Act or these rules by any person shall not be affected by virtue of coming into effect of these rules.”.

3. In the said rules, in rule 3, in sub-rule (2),

(a) in clause (a), the word “not” shall be omitted;

(b) in clause (c), after the brackets and letter “(e)”, the brackets and letter “(f),” shall be inserted.

4. In the said rules, in rule 4,-

(a) in clause (c), the words, brackets and letters “and having qualification mentioned at clause (a) or (b)” shall be omitted;

(b) in Explanation II, the words “and examination or training” shall be omitted;

(c) after Explanation II, the following Explanation shall be inserted, namely:

“Explanation III.- For the purposes of this rule and Annexure IV, ‘equivalent’ shall mean professional and technical qualifications which are recognised by the Ministry of Human Resources and Development as equivalent to professional and technical degree.”

5. In the said rules, in rule 10, the words “and he may conduct valuation as per these rules if required under any other law or by any other regulatory authority” shall be omitted.

6. In the said rules, in rule 11, the Explanation shall be omitted.

7. In the said rules, in rule 12, in sub-rule (1), in clause (ii), for the words “a professional institute”, the words “it is a professional institute” shall be substituted.

Eligibility Qualification and Experience for Registration as Valuer

Asset Class	Eligibility / Qualifications	Experience in specified discipline.
Plant and Machinery	(i) Graduate in Mechanical, Electrical, Electronic and Communication, Electronic and Instrumentation, Production, Chemical, Textiles, Leather, Metallurgy, or Aeronautical Engineering, or Graduate in Valuation of Plant and Machinery or equivalent; (ii) Post Graduate on above courses.	(i) Five years (ii) Three years
Land and Building	(i) Graduate in Civil Engineering, Architecture, Town Planning or equivalent; (ii) Post Graduate on above courses and also to valuation of land and building or Real Estate Valuation (a two-year full time post-graduation Course)	(i) Five years (ii) Three years
Securities or Financial Assets	(i) Member of Institute of Chartered Accountants of India, Member of Institute of Company Secretaries of India, Member of the Institute of Cost Accountants of India, Master of Business Administration or Post Graduate Diploma in Business Management (specialisation in finance). (ii) Post Graduate in Finance	Three years
Any other asset class along with corresponding qualifications and experience in accordance with rule 4 as may be specified by the Central Government.		

Note.- The eligibility qualification means qualification obtained from a recognised Indian University or equivalent Institute whether in India or abroad.”.

THE INTERNATIONAL VALUATION STANDARDS COUNCIL

The *International Valuation Standards Council* was established as an international organisation to set standards for valuation. Through the International Valuation Standards Board, the IVSC develops and maintains standards on how to undertake and report valuations, especially those that will be relied upon by investors and other third party stakeholders. The IVSC also supports the need to develop a framework of guidance on best practices for valuations of the various classes of assets and liabilities and for the implementation by properly trained professionals around the globe.

The IVSC has published International Valuation Standards (IVS) since 1985.

Membership of IVSC is open to organisations of users, providers, professional institutes, educators, and regulators of valuation services. IVSC members appoint the IVSC Board of Trustees.

In nutshell, valuations of businesses, business ownership interests, securities, tangible or intangible assets may be performed for a wide variety of purposes including the following:

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- Valuation for financial transactions such as acquisitions, mergers, leveraged buyouts, initial public offerings, employee stock ownership plans and other share based plans, partner and shareholder buy-ins or buyouts, and stock redemptions.
- Valuation for Dispute Resolution and/ or litigation/pending litigation relating to matters such as marital dissolution, bankruptcy, contractual disputes, owner disputes, dissenting shareholder and minority ownership oppression cases, employment disputes and intellectual property disputes.

Valuation for Compliance-oriented engagements, for example

- (a) Financial reporting and
- (b) Tax matters such as corporate reorganizations; income tax, Property tax, purchase price allocations; and charitable contributions.

Other purposes like valuation for planning, internal use by the owners, etc.

The same business may have different values if different standard of value is used and different approaches are adopted. The rising demand for valuation services has given new avenues for the finance professionals. Going forward more and more professional would be engaged in performing valuation services.

Case Study 3

Ranbaxy Laboratories Limited

Background: Ranbaxy was founded in 1937 and derived its name from that of its founders – Ranjit Singh and Gurbax Singh. It started out as the Indian distributor of vitamins and anti tuberculosis drugs for a Japanese pharmaceutical company. After the Second World War, Ranbaxy continued its role as a distributor and ventured in manufacturing drugs by setting up its first plant in 1961. Ranbaxy's first real breakthrough came in 1969 with Calmpose, a copy of Roche patented Vellum tranquillizer. By 1971, Ranbaxy had extended its strong position in anti infectives in the Indian market and expanded manufacturing capacity to keep pace with sales.

Strategic Shift

Due to the changing business conditions, it had become essential in 1993 to change the strategy of the company in order to tap rising opportunities. The senior management team of Ranbaxy underwent a strategic planning exercise called Vision 2003. Ranbaxy aimed to achieve two milestones by 2003; 1 billion in revenues and the development of one new therapeutic chemical molecule. The mission statement to become an international, research based pharmaceutical company was posed with many challenges at all levels of the company. The company had to redefine its product offerings and the markets it served. In structuring the foreign ventures, Ranbaxy focused on the entire value chain to maximize margins. In February 2004, Ranbaxy crossed as \$1 billion mark in its turnover.

In 2003, a gain a strategic planning revival exercise took place with a new plan in place called Vision 2012:

- Aspire to be a \$ 5 billion company by 2012
- Become a top 5 global generics pharma company
- Significant income from the proprietary products

The company has decided to focus on the following therapeutic areas to meet its Vision 2012:

- Infectious Diseases (Anti-bacterial and Anti-fungals),
- Urology (Benign Prostatic Hyperplasia (BPH) and Urinary Incontinence),
- Metabolic Diseases (Type 2 Diabetes, Hyperlipidemia) and
- Inflammatory/Respiratory diseases (Asthma, Chronic Pulmonary Obstructive Disease and Rheumatoid

Arthritis).

These choices allow Ranbaxy to enter large markets with significant unattended medical needs and to build on its research strengths. In 2008, Ranbaxy achieved a consolidated sale of \$ 1.7 billion. Its geographic and therapeutic sales break up is shown in Table 12.6 below:

Table 1 – Geographic and Therapeutic Sales of Ranbaxy in 2008

Region	%	Major Therapy	%
North America	27	Anti-infective	37
European Union	20	Cardiovascular	16
India	18	Gastrointestinal	NA
Asia (Excluding India)	6	Musculoskeletal	8
Russia and Ukraine	7	Central Nervous System	6
Africa and Latin America	12	Respiratory	6

The Deal Value

According to details of the deal, the enterprise value of Ranbaxy is estimated to be US \$ 8.5 billion at 737 price per share. The negotiated price of 737 represented a premium of 31.4% over the market price of Ranbaxy on the day of announcement. When the deal finally closed in November 2008, DIS had acquired 63.92% of the equity share capital of Ranbaxy as given below in table 2.

Table 2. – Daiichi-Sankyo acquisition of Ranbaxy

Date of Acquisition	Particulars	Number of Shares	% of Shareholding
October 15, 2008	Acquisition of Shares under Open Offer pursuant to Regulation 10 & 12 of the SEBI (Substantial Acquisition of Shares and Takeovers) Regulation, 1997 @ 737 per share	92,519,126	22.01
October 20, 2008	Allotment of Shares on Preferential basis @ 737 per share	46,258,063	11.00
October 20, 2008		81,913,234	19.49
November 07, 2008	Acquisition of Shares from the then Promoters of the Company @ 737 per share (First tranche)	48,020,900	11.42
	Acquisition of Shares from the then Promoters of the Company @ 737 per share (First tranche)		
Total		268,711,323	63.92

How much did Daiichi-Sankyo pay

<i>Nature of Transaction</i>	<i>Acquisition Consideration (in million yens)</i>
Open market share purchases	169,407
Share purchases from founding family (Gain of Promoters)	230,970
Share purchases by issuances of new shares (Money infused in Ranbaxy's balance sheet)	85,001
Direct acquisition related expenditures	2,974
Total	488,352

How did Daiichi-Sankyo value Ranbaxy

<i>Assets and Liabilities</i>	<i>Value Attributed (Yen billions)</i>	
Book value of assets and liabilities (Cash, Inventory etc.)	78.8	
Inventories (Increase in inventories in fair value)	2.0	
Tangible assets (Land)	10.0	
Intangible assets (Leasehold land)	5.9	
Intangible assets (Increase in current products, etc. to fair value)	41.0	
In-process R&D expenses	6.9	
Deferred tax liability	(20.0)	
Minority Interests	(45.0)	83.69
Goodwill	408.7	
Total consideration	<u>483.3</u>	

Valuation of Ranbaxy Laboratories Ltd.

Price paid per share by Daiichi	737
52 week high/low as on 11 th June 2008 for Ranbaxy share	593/300
Valuation of 63.92% stake by Daiichi	19804 crores
Valuation of 100% equity of Ranbaxy as per the deal	30982 crores
Enterprise Valuation of Ranbaxy (on a fully diluted basis)	\$8.5 billion
Market Capitalization of Ranbaxy as on 30 th May 2009 (Conclusion of Deal)	10434 crores

Table 3 – Impact of Ranbaxy deal on Daiichi-Sankyo Balance Sheet

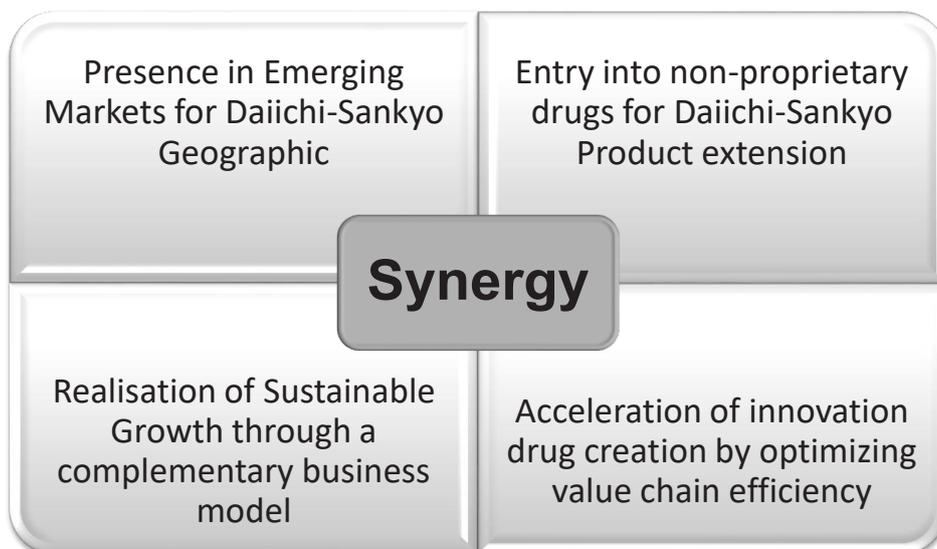
Region	In Yens Billion	Remarks
Net Profit/(Loss) for Daiichi-Sankyo in FY 2008	97.6	Recording of Y 351.3 billion in extraordinary losses due to a one-time write-off goodwill pertaining to the investment in Ranbaxy.
Net Profit/(Loss) for Daiichi-Sankyo in FY 2008	(215.5)	
Net cash used in investing activities in FY 2008	49.4	It is due to the cash acquisitions of shares in U3 Pharma and Ranbaxy, which entitled cash outflows
Net cash used in investing activities in FY 2009	413.8	
Short term bank loans in FY 2009	0.1	Borrowings for the acquisition of Ranbaxy's share Y + 240.0 billion
Short term bank loans in FY 2009	264.3	Increase by consolidation of Ranbaxy

Financing of Deal

Daiichi-Sankyo funded the acquisition through debt and existing cash reserves. Daiichi-Sankyo has taken a short and long term loans of 240 billion yens. That's almost 50% of the total funding requirement of the deal.

Strategic Reasons

The acquisition shall pave this way for creating a new and complementary hybrid business model that provides sustainable growth by diversification that spans the full spectrum of pharma business. The expected synergistic benefits are summarized in the exhibit below:



While DIS grew at 4.7% in 2007 to \$7.12 billion, Ranbaxy grew at over 10% to \$ 1.6 billion. While the world pharma industry grew at 6%, the generic segment is growing at 11%. The pursuit of the hybrid business model would help DIS to improve its growth rate substantially. Daiichi would be able to extend its reach to 56 countries from 21 countries where they currently operate.

Benefits to Daiichi Sankyo

In addition to the expected synergies, DIS will be benefited most by the low-cost manufacturing infrastructure and supply chain strengths of Ranbaxy. Further, DIS will be able to bring in efficiency in its operations by sourcing APIs⁶ and finished dosage products from Ranbaxy's 9 manufacturing plants in India and many more in other countries.

The R&D facilities of Ranbaxy would be used by DIS to not only reduce some of its R&D expenses, but also use competencies of Ranbaxy scientists to faster new product development. DIS is also expected to get Zenotech's expertise in the areas of biologics, oncology and specialty injectibles.

Benefits to Ranbaxy

According to the promoters of Ranbaxy, the deal was meant to take it to the next level of growth. With India honouring the product Patent regime from 2005, Generic drug companies are finding it more difficult to make similar versions of innovative drugs. (ii) further, tough times ahead has forced global generic majors to merge or buy or become generic behemoths, e.g., Sandoz's acquisition of German company Hexal in 2005.

Besides, there was a strong feeling that perhaps the game is over for Indian drug companies unless they pull up their socks and strengthen their R&D. Analysts feel that promoters of Ranbaxy could visualize this in advance and got the best possible deal while the going was still good and made a very decent, honorable and attractive exit.

Risk Involved

The Food and Drug Administration (FDA) issued two warning letters to Ranbaxy Laboratories and an Import Alert for generic drug produced by Ranbaxy's Dewas and Paonta Sahib plants in India on 16 September 2008. US officials could detain at the US border, any API and finished drugs manufactured at these plants. Analysts estimate the loss of business to Ranbaxy as a result of this development to be at \$40 million. This development has resulted in sharp fall of Ranbaxy share price by 6.6% on BSE.

Just a week after DIS announcement Ranbaxy announced the settlement of its protracted multi-country battle over Pfizer's \$12 billion cholesterol drug lipitor. Ranbaxy had entered into an agreement with Pfizer Inc. to settle most of the patent litigation worldwide over lipitor. After the announcement, Ranbaxy shares saw a dip by 7.7% as against Bombay Stock Exchange (B.S.E.) dip of 2.2%.

Analysts have expressed their doubt about the price paid for the acquisition as it was quite high compared to the present pricing of other Indian generic drug making companies. This may put severe strain on DIS's financials.

Notes:

1. In October 03, 2007, Ranbaxy entered into share purchase agreement with the promoters of Zenotech Laboratories Ltd. (ZLL) for acquiring 27.35% shares of ZLL' at a price of 160 per share. On the completion of the above acquisition, Ranbaxy made the public announcement to the shareholders of ZLL' to acquire upto 20% shares at a price of 160 per share. On the completion of the above acquisition, Ranbaxy' holds 46.79% shares of ZLL. As on October 20, 2008, Ranbaxy held 46.85% shares of ZLL'. As a result of acquisition of Ranbaxy by DIS, DIS has indirectly acquired 46.85% shares of ZLL'. In July, the Madurai bench of the Madras High Court had given stay on the open offer, following complaints made by minority shareholders. However, DIS got relief from the Supreme Court to go ahead with the offer.
2. India changed its policy of Patent regime from product to process in 1970 after enactment of Indian Patent Act. This has opened doors of reverse engineering to prepare formulations. This has helped Indian pharma companies in developing their capabilities at manufacturing low cost APIs, which global majors were selling at extremely high prices. In 2005, the wheel of patent perfection came a full circle as India amended the Patent Act, to recognize the product patent under the obligation of WTO regime.

3. Under the agreement, Ranbaxy will delay the start of its 180 days exclusively period for a generic version of lipitor, until November 2011. While the settlement avoided further legal cost for Ranbaxy in fighting Pfizer, if it had won the case, Ranbaxy could have introduced generic version as early as March 2010.
4. DIS plans to record a valuation loss of \$3.99 billion on its shares in its India based subsidiary Ranbaxy Laboratories to reflect the decline in the market value of shares.

On a non correlated basis DIS plans to record a non-cash valuation loss of \$3.99 billion on its shares in Ranbaxy in its third quarter to reflect a more than 50% decline in market value of these securities versus the purchase price. The company said in a statement on the company's website.

DIS sees no impact on its forecasts for non-consolidated net-sales, operating income or ordinary income for the third-quarter as a result of these anticipated extraordinary losses. The company also sees no impact in cash flows. However, these items will have a significant negative impact on the company's consolidated financial results for the net income for the year 2008-09. Reacting to this news DIS shares fell 1.2% on the Tokyo stock exchange.

Practice Questions on Valuation

Question 7

Jupiter Ltd. wishes to taken-over Tally Ltd. Financial details of both the companies are as under:

Liabilities	Jupiter Ltd. (Rs in '000)	Tally Ltd (Rs in '000)
Equity share (Rs.10 per share)	1,00,000	50,000
Shares Premium account	–	2,000
Profit and loss account	38,000	4,000
Preference Shares	20,000	–
10% Debentures	1,73,000	61,000
Maintainable annual profit (after tax) for equity shareholders (Rs.in '000)	24,0000	15,000
Market price per equity share (Rs)	24	27
Price-earnings ratio	10	9

You are required to answer the following:

- (a) What offer do you think jupiter ltd. could make to tally ltd. in terms of exchange ratio based on-
 - (i) Net asset value
 - (ii) Earnings per share; and
 - (iii) Market price per share?

Answer:

(i) Exchange ratio on the basis of net asset value:

	Jupitor Ltd	Tally Limited
Fixed Assets	1,22,000	35,000
Net Current assets	51,000	26,000
Total	1,73,000	61,000
Less:		
10% Debentures	15,000	5,000
Preference shares	20,000	-
Net Assets	1,38,000	56,000
Shares	10,000	5,000
Net Asset value per shares	13.80	11.20

Exchange ratio = $11.20 / 13.80$

= **0.812**

(ii) Exchange ratio based on earning per shares

	Jupitor Ltd.	Tally Ltd.
Earning after tax		
For equity shareholders	= 24,000	15,000
Shares	= 10,000	5,000
Earning per share	= 2.4	3
Exchange ratio	= $3/4$	= 1.25

(iii) Exchange ratio on the basis of market price per share (MPS)

Exchange ratio	= $27/24$	= 1.125
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Question 8

Blue Ltd. and Moon Ltd. Have agreed to amalgamate to form an new company blue moon Ltd. After negotiation, the two companies have decided on the balance sheets as given below:

(Rs in '000)

	Blue Ltd.	Moon Ltd.
EQUITY AND LIABILITES		
(1) Shareholders' funds		
(a) Share capital		
Equity Shares of Rs.10 each	5,00,000	10,00,000
(b) Reserves and surplus		

Reserve fund	20,000	–
Surplus	40,000	40,000
(2) Current liabilities		
Trade payables	40,000	60,000
TOTAL	6,00,000	11,00,000
	Blue Ltd.	Moon Ltd
ASSETS		
(1) Non-current assets		
(i) Tangible asset		
(a) Land and building	2,00,000	4,25,000
(b) Plant and machinery	1,70,000	2,75,000
(ii) Intangible assets (Good Will)	50,000	1,00,000
(2) Current assets		
(a) Inventories	80,000	1,20,000
(b) Trade receivables	30,000	1,00,000
(c) Cash and cash equivalents	70,000	80,000
	6,00,000	11,00,000

The assets and liabilities are taken over by blue Moon Ltd. Computer the total number of share of the blue Moon Ltd. Having a value of Rs.10 each to be issued to the shareholder of blue Ltd. and Moon Ltd. using net asset value method.

Answer:

	Blue Ltd.	Moon Ltd
Non-Current and Current Assets	Rs. 6,00,000	Rs.11,00,000
Less: Current Liabilities	Rs. 40,000	Rs. 60,000
Net Asset	Rs.5,60,000	Rs.10,40,000
Share to be issued by Blue & Moon Ltd.	5,60,000/10	10,40,000/10
Number of shares	=56,000	=1,04,000

Question 9

The following abridged Balance Sheet as at 31st March, 2017 pertains to A Ltd.

Liabilities	Rs. in lakhs	Assets	Rs. in lakhs
Share Capital:		Goodwill, at cost	420
180 lakhs Equity shares of Rs. 10 each, fully paid up	1,800	Other Fixed Assets Current Assets	11,166
90 lakhs Equity shares of Rs. 10		Loans and Advances	2,910
			933

each, Rs. 8 paid up	720		
150 lakh Equity shares of Rs. 5 each, fully paid-up	750		
Reserves and Surplus	5,457		
Secured Loans	4,500		
Current Liabilities	1,242		
Provisions	960		
	15,429		15,429

You are required to calculate the following for each one of the three categories of equity shares appearing in the above mentioned Balance Sheet:

- (i) Intrinsic value on the basis of book values of Assets and Liabilities including goodwill;
- (ii) Value per share on the basis of dividend yield.

Normal rate of dividend in the concerned industry is 15%, whereas Glorious Ltd. has been paying 20% dividend for the last four years and is expected to maintain it in the next few years; and

- (iii) Value per share on the basis of EPS.

For the year ended 31st March, 2017 the company has earned Rs. 1,371 lakhs as profit after tax, which can be considered to be normal for the company. Average EPS for a fully paid share of Rs. 10 of a Company in the same industry is Rs. 2.

Answer :

- (i) Intrinsic value on the basis of book values

	Rs. in lakhs	Rs. in lakhs
Goodwill		420
Other Fixed Assets		11,166
Current Assets		2,910
Loans and Advances		933
		15,429
<i>Less:</i> Secured loans	4,500	
Current liabilities	1,242	
Provisions	960	(6,702)
		8,727
<i>Add:</i> Notional call on 90 lakhs equity shares @ Rs. 2 per share		180
		8,907

Equivalent number of equity shares of Rs. 10 each.

	No. of Equity shares
Fully paid shares of Rs.10 each	180
Partly-paid shares after notional call	90
Fully paid up share of Rs. 5 each 150 lakh/10*5	75
	345

Value per equivalent share of Rs 10 each.

Hence, intrinsic values of each equity share are as follows:

Value of fully paid share of Rs. 10 = Rs.25.82 per equity share.

Value of share of Rs. 10, Rs. 8 paid-up = Rs. 25.82 – Rs. 2 = Rs. 23.82 per equity share.

Value of fully paid up Rs. 5 share $25.82/2=12.19$

SUMMARY

- Valuation is carried out at various occasions like
 - Mergers and Amalgamation
 - IPO
 - Issue of ESOP
 - Demerger
 - Strategic ventures
- There are various methods of valuation and there is no one best method of valuation
- Company Secretary can act as Registered Valuer under Companies Act, 2013
- The methods of valuation are : Asset based valuation, Earning based valuation and market based valuation
- There are other techniques also of valuation like discounted cash flows, Economic Value method
- Asset based method, valuation is carried out by adding the value of all the assets of the company and subtracting the liabilities, leaving a net asset valuation.
- Valuation based on earnings is by considering the income flow in the company
- Market based valuation compares Company with other companies of similar size and nature

SELF TEST QUESTIONS

1. What is the purpose of valuation?
2. "Valuation of shares of an enterprise demands a detailed and comprehensive analysis of various factors" List those factors which affect valuation.
3. What factors should be considered by Facebook for valuation of WhatsApp?
4. ABC Company is considering acquisition of XYZ Ltd. which has 1.5 crores shares outstanding and issued. The market price per share is Rs. 400 at present. ABC's average cost of capital is 12%. Available information from XYZ indicates its expected cash accruals for the next 3 years as follows:

Year	Rs. In crore
2015	500
2016	550
2017	600

Calculate the range of valuation that ABC has to consider. (PV factors at 12% for years 1 to 3 respectively: 0.893, 0.797 and 0.712).

5. A limited has earned a profit of Rs. 80 lakhs before tax for the year ended 31st March 2018. Tax amount is Rs. 22 lakh. The share capital of the company is RS. 1 crore (4,00,000 equity shares of Rs. 10 each and 6,00,000 7% Preference shares of Rs. 10 each). Compute Earning per share (EPS) of ALtd.
6. “Relative valuation is all about comparative analysis” with the peer companies” Comment
7. In which circumstances, is the market based approach to valuation not relevant and useful?
8. What are various principles a valuer should keep in mind while valuation?
9. Explain the types of Valuation?
10. “Valuation is an important aspect in merger and acquisition and it should be done by a team of experts” Comment on the above statements mentioning who are those experts.
11. What is the role of a company secretary in valuation?
12. What are the general factors to be considered while carrying ot valuation?
13. “Valuation standards would ensure more better valuation of business” Comment.

LIST OF FURTHER READINGS

- 1) Valuation Methods and Shareholder Value Creation by Pablo Fernández, published by Elsevier.
- 2) Valuation: Measuring and Managing the Value of Companies by Mckinsey & Company.
- 3) Valuation Techniques: Discounted Cash Flow, Earnings Quality, Measures of Value Added, and Real Options by David T. Larrabee, published by John Wiley & Sons
- 4) Asset class: Securities or Financial Assets, published by Registered Valuers Organisation.

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- 1) Damodaran, A. (2006). *Damodaran on valuation*. Hoboken, N.J.: Wiley.
ICSI, (2017) Corporate Restructuring, Valuation and Insolvency 252-266
- 2) Brealey, R., Myers, S., & Allen, F. (2006). *Corporate finance*. New York: McGraw-Hill Irwin.
- 3) Blair Macdonald (2013) – “Business Valuations- A guide to business valuation”<http://www.perthbusinessvaluations.com.au/wp-content/uploads/2013/03/Business%20Valuation%20Guide.pdf>

Lesson 6

Steps to Establish the Business Worth

LESSON OUTLINE

- Introduction
- How a Business Valuation Helps Company Owners Avoid Guesswork
- From Fair Market Value to Book Value
- Steps To Establish Business Worth
 - Planning and preparation
 - Adjusting the financial statements
 - Choosing the business valuation methods
 - Applying the selected valuation methods
 - Reaching the business value conclusion
- Case Study of Tata Steel Limited
- SUMMARY
- SELF TEST QUESTIONS

LEARNING OBJECTIVES

Business Valuation can be looked at as both a science and an art. As a science, it derives its basic principles from the theory of corporate finance and investments. As an art, it evolved out of the myriad ways analysts value businesses in practice.

The main objective of this chapter is to make student aware about how the valuation of a company is done and how the practitioners need to be proficient in the theory of corporate finance to get theoretically consistent estimates of enterprise value.

After studying this chapter the student will be able to forecast the financial statement of the company and calculate the terminal value of the company. Students of valuation need to develop skills in both the theory of valuation as well as in the practical aspects such as how cash flows are projected in real life etc.

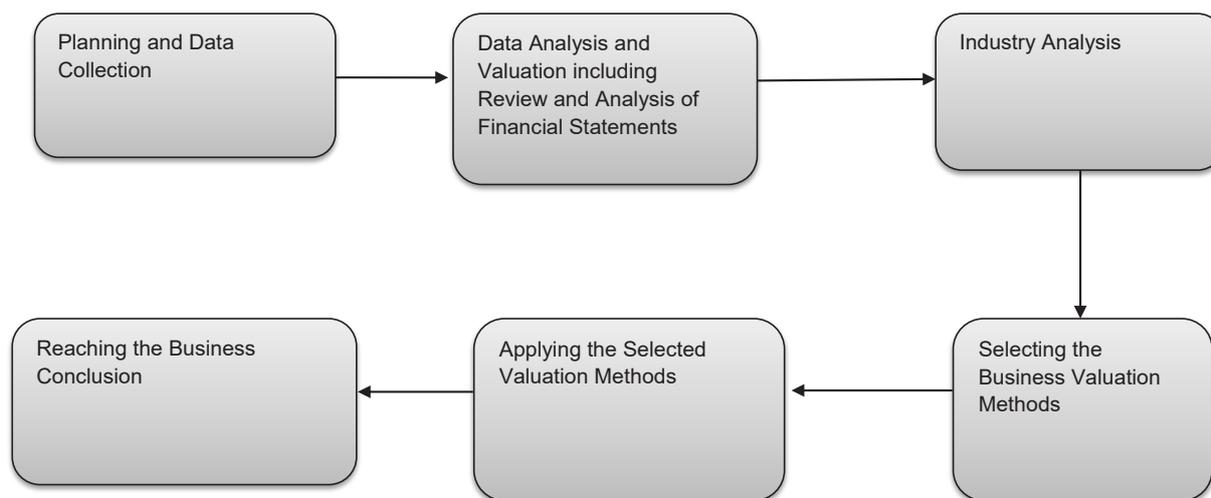
While building the valuation model student will face various questions as:

- a) the determination of appropriate discount rate
- b) the proper treatment of cash and other financial assets
- c) proper treatment of non-interest bearing liabilities
- d) the justification of assumption
- e) determination of which multiple to use and how to properly use.

ORIENTATION

This lesson is of paramount significance as it throws ample light on vital facets pertaining to the process involved in ascertaining the value of a business, i.e. right from the planning and data collection to reaching the culmination point of business valuation have been extensively covered. In view of the substantial significance this lesson holds, it requires an expert level knowledge on the part of the readers.

FAMILY TREE OF CONCEPTS



INTRODUCTION

Business Valuation is the key to determining the value or worth of a business. In this fast-changing economic climate, every business needs to have an up-to-date business valuation on hand at all times. Even if your business was valued only a year ago, it probably won't have the same value today as business values go up and down. Therefore, it has become imperative to keep a close track of business 'value.

Business valuation is a process and a set of procedures used to estimate the economic value of an owner's interest in a business. Valuation is used by financial market participants to determine the price they are willing to pay or receive to effect a sale of a business. In addition to estimating the selling price of a business, the same valuation tools are often used by business appraisers to resolve disputes related to estate and gift taxation, divorce litigation, allocate business purchase price among business assets, establish a formula for estimating the value of partners' ownership interest for buy-sell agreements, and many other business and legal purposes such as in shareholders deadlock, divorce litigation and estate contest.

Business Valuation gives the ability to owners to create a practical timeline for the potential sale of business and for other exit strategies. It provides a road map about how to adjust their short-term or long-term business goals and when to pull back in certain sectors or push forward in another.

How a Business Valuation Helps Company Owners Avoid Guesswork

Many owners of small companies know intricate details about all facets of their business, from sales and marketing to payroll and personnel. Yet, they rarely know one of the most critical facts of all – how much their companies would be worth if they were put on the market.

Determining the "fair market value" of a business is important not only when the owner is putting up a "for sale" sign; it also can affect long-range planning. For example, succession planning can help a business owner

make arrangements for transferring shares to a partner or heir through a buy-sell agreement funded with life insurance. To determine the buy-out price and fund it with adequate insurance, it is necessary to know how much the business is worth. At the death of an owner, the value that passes to heirs often is of great interest to the IRS in calculating estate taxes and any future capital gains.

To obtain an analysis of business value, small businesses may wish to hire a professional appraiser. This individual or company will use techniques described in this article to establish an objective opinion on value. This determination then can be used in a variety of planning applications and may eventually help the owner achieve a higher sale price or lower tax impact after a sale.

From Fair Market Value to Book Value

The goal of a methodical business valuation process is to arrive at a clear and supportable estimate of “fair market value.” Under a section of the Internal Revenue Code, this is defined as:

“...the price at which the property will change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having a reasonable knowledge or relevant facts.”

In 1959 the IRS issued a revenue ruling that identified specific factors that can influence fair market value. They include the nature of the business, the economic outlook, book value, earnings, dividends, goodwill and recent prices paid for similar businesses.

STEPS TO ESTABLISH BUSINESS WORTH

Business valuation is a process that follows a number of key steps starting with the definition of the task at hand and leading to the business value conclusion. The five steps are:

1. Planning and preparation
2. Adjusting the financial statements
3. Choosing the business valuation methods
4. Applying the selected valuation methods
5. Reaching the business value conclusion

Step 1: Planning and Preparation

A successful business takes planning and disciplined effort; effective business valuation requires organization and attention to detail. The two key starting points toward establishing your business worth are:

- determining why you need business valuation
- assembling all the required information

It may seem surprising at first that the valuation results are influenced by your need for business valuation. Isn't business value absolute? Not really. Business valuation is a process of measuring business worth. And this process depends on two key elements: how you measure business value and under what circumstances.

In formal terms, these elements are known as the standard of value and the premise of value.

Business value depends on how and why it's measured.

The standard measure of value used in business valuation.

For whom is the business value determined?

The most common standards of value used in small business valuation are:

- Fair market value: The fair market value of an asset is established when a willing business buyer and a willing seller reach an agreement, with both parties acting in full knowledge of all facts and not being forced to conclude the transaction by circumstances.
- Investment value: The investment value standard lets you determine the value to a real business person with specific business ownership objectives.
- Intrinsic value: The intrinsic business value standard if you seek to determine the business worth based on your solid understanding of the business fundamental attributes. This knowledge allows you to develop a comprehensive estimate of business value based on what business ownership benefits can be achieved. These benefits are tied to a number of key factors such as:
 1. Business earnings potential.
 2. Likely business growth.
 3. Company's financial and operational strength

Business valuation depends on how business value is defined

Different standards of value may lead you to different conclusions as to what a business is worth. It is not surprising, for example, that an investor focused on purely financial returns may value a business differently than an entrepreneur looking to fulfill personal goals.

A few examples will illustrate this important point.

Suppose you want to sell your business. Business has been good, with revenues and profits growing each year. You plan to market the business until a suitable buyer is found. You want to pick the best offer and are not in a hurry to sell.

In this situation your standard of value is the so-called fair market value. Your premise of value is a business sale of 100% ownership interest, on a going concern basis. In other words, you plan to sell your business to the highest and most suited bidder and it will continue running under the new ownership.

Next let's imagine that you own a small business that has developed a product of great interest to a large public corporation. They already approached you offering to buy you out. They have some great plans for your product and want to sell it internationally. These people are even prepared to offer you some of their publicly traded stock.

In this scenario you have a synergistic buyer who is applying the so-called investment standard of measuring your business value. Such buyers are often willing to pay a premium for a business because they can realize some unique advantages through a business purchase.

Now consider a situation where the business owners need to settle a large bill with one of the business' creditors who is tired of waiting. There is not enough cash in the bank to cover the amount, so business assets need to be sold quickly.

This is the case where the so-called forced liquidation premise of value may apply – business owners don't have enough time to look for a suitable buyer and may have to resort to a quick auction sale.

Once you know how and under what conditions you will measure your business worth, it is time to gather the relevant data that impacts the business value. This data may include the business financial statements, operational procedures, marketing and business plans, customer and vendor information, and staff records.

Business facts that affects business value

Here are a few examples of how information about the quality of operation affects the business value.

- Well-documented financial statements and tax returns are essential to demonstrate the business earning power.
- Steady, above industry norm earnings tend to translate into higher business value.
- Detailed written business operating procedures make it easy to understand how the business works, who does what, and what skills are required.
- Since it is easier to take over a well-organized business, there is higher business buyer interest and competition among them tends to increase the business selling price.
- A good marketing plan provides the essential inputs into the future business earnings projections. And accurate earnings projections are key to establishing the business value based on its income.
- A look at the customer list quickly shows where the business gets its revenues. Businesses that do not rely on a few large customers for most of their business sales tend to command a higher selling price.

Step 2: Adjusting the Historical Financial Statements

Business valuation is largely an economic analysis exercise. Not surprisingly, the company financial information provides key inputs into the process. The two main financial statements you need for business valuation are the income statement and the balance sheet. To do a proper job of valuing a small business, you should have 3–5 years of historic income statements and balance sheets available.

Many small business owners manage their businesses to reduce taxable income. Yet when it comes to valuing the business, an accurate demonstration of the full business earning potential is essential.

Since business owners have considerable discretion in how they use the business assets as well as what income and expenses they recognize, the company historical financial statements may need to be recast or adjusted.

The idea is to construct an accurate relationship between the required business assets, expenses and the levels of business income these assets are capable of producing. In general, both the balance sheet and the income statement require recasting in order to generate inputs for use in business valuation. Here are the most common adjustments:

- Recasting the Income Statement.
- Recasting the Balance Sheet

a) Recasting the Income Statement

To establish the business profitability potential, you may need to make some normalizing adjustments to the **income statement**. There are a number of items that frequently require adjustment.

Owners compensation adjustments

Adjust total owner compensation to the market rate of hiring a manager replacement. Note that the total owner compensation includes the owner salary, bonuses, profit sharing payouts and benefits. Adjust the working family and friends' compensation to the market rate required to hire a replacement to perform the same function.

Non-cash expenses

Regardless of the depreciation method used, you may need to adjust the depreciation expense to match the true economic value of the business assets.

Inventory normalization

If inventory accounting is reported on the LIFO basis, convert it to the FIFO basis. Simply add back the LIFO reserve which should be available from the financial statement footnotes or the company's CPA. The FIFO inventory reporting accurately reflects the company inventory costs and is a preferred choice when assessing gross margins.

Business rental expense adjustments

Adjust rents to the fair market rent values. This is important if recorded rent expense is above or below market rates. An example is the business owner renting personally owned property back to the business at above market in order to minimize the taxable income.

Adjust out any non-recurring items

- Factor out the effect of any business interruptions. An example is when the business operations are paused due to facility repairs.
- Factor out amounts from insurance claim proceeds and lawsuit settlements.
- Eliminate any one-time gains or losses from the disposition of assets. An example is selling autos or company owned real estate.
- Exclude gains or losses from business operations that have been discontinued. An example is a closed retail unit.
- Remove abnormally high or low profits. An example is high profit margins due to a temporary spike in demand.
- Factor out one-time expenses such as the business moving expenses.

Unrecorded expenses

Include the actual or potential business expenses that have not been recorded:

- Unrecorded accrued expenses. Examples are staff vacation or bonus pay.
- Check and adjust for bad debt expenses. Examples are uncollectible accounts receivable – check the receivables aging report.

Adjustments for expected future changes

Factor in any potential changes such as an expected loss of a key customer. This should be accounted for in your cash flow projections.

Handling non-operating income and expenses

Remove non-operating income or expense. Examples are non-business real estate income or expenses.

b) Recasting the Balance Sheet

The company value depends upon its asset base and the ability of the business assets to generate revenues and profits for the owners. The purpose of recasting the balance sheet is to ensure that the value of assets and liabilities accurately represents the business earning power. There are a number of balance sheet items that may require adjustment.

Typical asset adjustments for business valuation

Adjust the company assets from their cost-basis value to the current fair market value. A common technique is to determine the depreciated replacement cost of an asset. This is the cost required to replace the existing asset with a new equivalent, minus the adjustment for the time the asset has been in service.

Adjust the business liquid assets such as cash and short-term investments, to the level required to operate the business. Eliminate excess cash from the balance sheet. Account for the additional cash needed if it is below the required levels.

Adjust Accounts Receivable for uncollectible amounts. Review the accounts receivable aging report for proper assessment of the bad debt allowance.

Verify the inventory. Adjust to the current market cost, remove obsolete items, e.g. those that have not sold within the 12 previous months. The inventory should be valued on the FIFO basis since it tends to represent the current inventory value more accurately than the LIFO method.

Adjust any operating real estate to the fair market value. Current real property appraisal is recommended.

Business liabilities adjustments

Some of the business liabilities may also require adjustment from the book value:

Adjust below-market interest debt to current market rates. Assumable payments under such favorable debt financing terms should be discounted at the current market interest rate, which effectively reduces the present value of the liability.

Adjust deferred taxes for timing and amount of income tax payments.

Off-balance sheet item adjustments

Adjust the balance sheet for any off-balance sheet items, such as intangible assets and contingent liabilities. Examples of off-balance sheet assets include intellectual property such as internally developed products. Examples of off-balance sheet liabilities are an impending law suit settlement or regulatory agency compliance costs.

Step 3: Choosing the Business Valuation Methods

Once your data is prepared, it is time to choose the business valuation procedures. Since there are a number of well-established methods to determine business value, it is a good idea to use several of them to cross-check your results.

All known business valuation methods fall under one or more of these fundamental approaches:

- Asset approach
- Market approach
- Income approach

The set of methods you choose to determine your business value depends upon a number of factors. Here are some key points to consider:

- The complexity and value of the company's asset base.
- Availability of the comparative business sale data from the market.
- Business earnings history.
- Availability of reliable business earnings projections into the future.
- Availability of data on the business cost of capital, both debt and equity.

Asset Approach

Under the asset approach you adopt the view of a business as a set of assets and liabilities. The balance sheet elements serve as building blocks to create the picture of business value. A finance professor would tell you that the asset approach is based on the economic principle of substitution.

What will it cost to create another business like this one that will produce the same economic benefits for its owners?

The cost here is a bit tricky. Sure, the costs include coming up with the actual business equipment and machinery, office furniture, and the like. But don't forget that costs also include lost income as you are staking out the company's position in the market, while an established competitor is busy raking in the dough.

Plus, you need to account for functional and economic obsolescence of business assets. Things have a tendency to wear out and need to be replaced at some point.

Intangible assets, such as technology, may be getting a bit long in the tooth. A company still using vacuum tubes in its products while the competitors are pushing nanotech is behind the times. Not cool.

So if the company's financial condition is defined by its assets and liabilities why not just figure out the values of these and calculate business value as the difference, much like on the balance sheet?

The idea is simple enough, but the trick is to figure out which assets and liabilities to include in your valuation and how to measure what each is worth.

If you are thinking the usual accounting balance sheet will do it, think again. Your balance sheet may be missing some crown jewels such as internally developed technology, patents and trademarks, and proprietary ways of doing business.

If the company did not pay for this intellectual property, it does not get recorded on the "cost-basis" balance sheet!

But the real value of these assets may be far greater than all the recorded assets put together. Imagine a business without its special products or services that make it unique and bring customers in the door

Choosing the asset based business valuation methods

Determining the value of an asset-rich company may justify the cost and complexity of the asset-based valuation methods, such as the asset accumulation method. In addition to valuing the individual business assets and liabilities, the method can be helpful when allocating the business purchase price across the individual business assets, as part of the asset purchase agreement.

However, the method requires considerable skill in individual asset and liability valuation which often makes its application costly and time consuming.

See example:

Business Value = Assets + Business Goodwill

MARKET APPROACH

Under the market approach, you look for signs from the real market place to figure out what a business is worth. The market is a competitive place, so the economic principle of competition applies:

What are other businesses worth that are similar to my business?

No business operates in a vacuum. If what you do is really great then odds are there are other smart people doing the same or similar things.

Looking to buy a business? You need to decide what type of business you want and then look around to see what the “going rate” is for businesses of this type.

Planning on a business sale? You would do well to check the market to see what similar businesses sell for.

With all this jockeying for the best deal going on, you would think that the market will settle to some sort of business price equilibrium – something the buyers will be willing to shell out and the sellers willing to accept.

Valuing a Business based on Market Comps

The market approach offers you perhaps the most compelling way to determine the business value. Many business people and appraisal experts believe the market to be the ultimate judge of what a business is worth.

In this sense, the business market value is revealed by the price the business fetches in an actual sale. Comparison against the sales of similar businesses is the next best thing - you can gather enough statistical evidence to price your business quite accurately.

Key uses of market-based business valuation

Determining your business value by such market comparisons is especially useful in these situations:

1. To set an asking price or offer price for a business acquisition.
2. To defend your business valuation in a legal controversy or before the tax authorities.
3. To justify your business value in a dispute such as partner disagreements or buyout.

Business fair market value estimation

Market comparisons are an excellent way to estimate the very important fair market value of a business. This is by far the most common measure of business value – and is the de-facto standard used in most business valuations.

Valuation Multiples: business value calculation

You can use a number of *valuation multiples* to estimate your business fair market value. All such multiples are statistically derived ratios that relate the potential business selling price to some measure of its financial performance.

Using the valuation multiples derived from comparable business sales, you can determine what your business is worth based on its recent revenues, net income, discretionary cash flow, EBITDA, total assets or book value, among others.

For example, you can take the Price to Gross Revenues Multiple and multiply it by your business revenue figure. The result is the market-based estimate of what your business is worth.

How the market based business valuation methods work

Market based business valuation methods focus on estimating business value by examining the business sale transaction data available from the actual market place. There are two types of transaction data that can be used:

- Guideline transactions involving similar public companies.
- Comparative transactions involving private companies that closely resemble the subject business.

The advantage of using the public guideline company data is that it is plentiful and readily available. However, you need to be careful when selecting such data to make an “apples to apples” comparison to a private company.

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In contrast, reviewing business sales of similar private companies provides an excellent and direct way to estimate the business value. The challenge is gathering sufficient data for a meaningful comparison.

Regardless of which market-based method you choose, the calculations rely on a set of so-called *pricing multiples* that let you estimate the business worth in comparison to some measure of the business economic performance. Typical pricing multiples used in small business valuation include:

- Selling price to revenue.
- Selling price to business earnings such as net income, EBITDA, or net cash flow.

Each pricing multiple is a ratio of the likely business selling price divided by the respective economic performance value. So, for instance, the selling price to revenue multiple is calculated by dividing the business selling price by business revenue.

To estimate your business value, you can use one or more of these pricing multiples. For example, take the selling price to revenue pricing multiple and multiply it by the business annual revenue. The result is the business selling price estimate.

Valuation multiple formulas

More sophisticated market based business valuation methods, such as the Market Comps in ValuAdder, use business pricing rules that make an intelligent choice of which pricing multipliers to apply when valuing a business. In addition, the Market Comps let you account for key business attributes automatically:

- Business revenue or profits
- Inventory
- FF&E
- Tangible asset base

The Income Based Business Valuation

Income based business valuation methods determine business worth based on the business earning power. Business valuation experts widely consider these methods to be the most accurate. All income-based business valuation methods rely on either discounting or capitalization of some measure of business earnings.

The discounting methods, such as the ValuAdder Discounted Cash Flow, produce very accurate results by letting you specify the details of the expected business income stream over time. The Discounted Cash Flow method is an excellent choice for valuing a young or rapidly growing company whose earnings vary considerably.

Alternatively, the so-called direct capitalization methods, such as the ValuAdder Multiple of Discretionary Earnings, determine your business worth based on the business earnings and a carefully constructed capitalization rate. The Multiple of Discretionary Earnings method is an outstanding choice for valuing small established companies with consistent earnings and growth rates.

The income valuation approach helps you to figure what kind of money the business is likely to bring as well as to assess the risk.

The real power of the income valuation is that it lets you calculate business value in the present. To do so, the expected income and risk must be translated to today. There are two ways you can do this translation:

- Capitalization
- Discounting

Business valuation by income capitalization

The capitalization valuation method is essentially the result of dividing the expected business earnings by what is known as the capitalization rate. The idea is that the business value is defined by business earnings and the capitalization rate is used to relate the two.

For example, if the capitalization rate is 33%, then the business is worth about 3 times its annual earnings. An alternative is a capitalization factor that is used to multiply the income. Either way, the result is what the business value is today.

The capitalization method works really well for businesses with steady, predictable earnings. Nothing like a cash cow business to cut you a handsome paycheck every month.

Valuation of a business by discounting its cash flow

For the rest of us there is the discounting valuation method: first, you forecast the business income some time into the future, usually a number of years. Next, you figure out the discount rate which captures the risk of getting this income on time and in full measure.

Finally, you estimate what the business is likely to be worth at the end of your forecast period. If you expect the company to keep running, there is some residual value, also known as the terminal value. Discounting the forecast earnings and the terminal value together gives you the present value of the business, or what it is worth today.

Business valuation: how discount and cap rates are related

Since both income valuation methods do the same thing, you would expect similar results. You would be right, the capitalization and discount rates are related:

$$CR = DR - K$$

where CR is the capitalization rate, DR is the discount rate, and K is the expected average growth rate in the income stream. As an example, let's say that the discount rate is 25% and your forecast suggests that the business profits would be growing at a steady 5% per year. Then your capitalization rate is $25 - 5 = 20\%$.

What is the real difference between capitalization and discounting? Capitalization uses a single income figure such as the average of the earnings over several years or the most recent number. The discounting is run on a sequence of income numbers, one for each year in your forecast.

If your business shows smooth, steady profits year after year, the capitalization valuation is a good way to go. For a young start-up or businesses with rapidly changing earnings, discounting gives the most accurate results.

Can business valuation methods produce different results?

Consider two business buyers doing earnings forecasts and sizing up the risk of owning a given business. Each buyer may see business risk differently so their capitalization and discount rates will differ. In addition, the two buyers may have different ideas of where to take the company. This will affect their income stream projections.

So even if they use the same valuation methods, the business valuation results may differ quite a bit. The financial gurus call it the investment value standard of valuing a business. Each business buyer acts as an investor and measures the business value differently, based on their unique investment goals.

Step 4: Number Crunching: Applying the Selected Business Valuation Methods

With the relevant data assembled and your choices of the business valuation methods made, calculating your business value should produce accurate and easily justifiable results.

One reason to use several business valuation methods is to cross-check your assumptions. For example, if one business valuation method produces surprisingly different results, you could review the inputs and consider if anything has been overlooked.

ValuAdder business valuation software helps you focus on the big picture of determining the business value by automating complex calculations and letting you easily adjust and capture your assumptions while running multiple what-if valuation scenarios.

Business valuation software is used by business people to calculate business value based upon one or more of the business valuation approaches. In addition to the obvious advantage of time-saving computer automation, business valuation software has a number of additional benefits:

- It simplifies business valuation by performing a range of complex mathematical calculations.
- You can use business valuation software to appraise a business even if you lack the professional appraisal knowledge.
- It helps organize the business appraisal process.
- You can get reliable business valuation results quickly by following an established business appraisal process.
- It assists with communicating the business valuation results.

Your business valuation reporting needs may include a printed report, an electronic PDF copy, an e-mail attachment or a Web page.

Business valuation software tools must assist business people with making critical decisions, while performing routine calculations automatically. Here are the key elements that set apart quality business valuation software products:

1. Ease of use

Business valuation software that makes your life easier integrates a number of tools and resources into one easy-to-use package. You should have ready access to the tools you need and help on how to use them.

2. Power

Business valuation software should support a number of standard business valuation methods. Your tools must help you focus on the “big picture” of measuring your business worth – handling all the math details for you.

3. Flexibility

You can do your business valuation using a number of methods under the market, income, and asset business valuation approaches. No one method is better than another.

Market comparisons can be an excellent way to measure the value of a “main street” business. A start-up business can be valued using the Discounted Cash Flow Method. The value of an established asset-rich business may be appraised by the Capitalized Excess Earnings Method.

Your choices of which methods to use should be customizable and easy to make.

4. Extensive help system

If you are new to business valuation, understanding the right terms and concepts is very important. To save you time, your business valuation software Help System should provide you with a quick reference to the term definitions, explanations and examples of the tools.

The system should act as your Information Center by offering suggestions on how to calculate and interpret your business valuation results.

5. Accuracy of business valuation calculations

Needless to say, the credibility of your business appraisal relies upon the accuracy of your results. Business valuation software should offer you a choice of well-designed, standard business valuation methods.

The results you obtain by using well-established business valuation methods are likely to meet with acceptance from other business people and professionals.

6. Security of critical business data and your computer systems

Business valuation involves analysis of sensitive business data. Your business valuation software should safeguard privacy and security of this data and support its communication to the right people.

Your laptop or desktop computer should be protected against malware at all times. To ensure this is so, your business valuation software must be signed by a code signing certificate issued by a major security authority or, in the case of Mac computers, Apple, Inc. Your Windows computer uses the Authenticode® technology and Mac computers are equipped with the Gatekeeper® to:

- verify the identity of the software publisher
- ensure that the software product is free of computer threats
- and check that the software has not been tampered with.

7. Cost of ownership

State-of-the-art business valuation software should help you measure your business value – without breaking the bank.

Modern technologies, such as Open Source, help make your business valuation software far more powerful and cost-effective when compared to older proprietary systems.

Step 5: Reaching the Business Value Conclusion

Finally, with the results from the selected valuation methods available, you can make the decision of what the business is worth. This is called the business value synthesis. Since no one valuation method provides the definitive answer, you may decide to use several results from the various methods to form your opinion of what the business is worth.

Since the various business valuation methods you have chosen may produce somewhat different results, concluding the business value requires that these differences be reconciled.

Business valuation experts generally use a weighting scheme to derive the business value conclusion. The weights assigned to the results of the business valuation methods serve to rank their relative importance in reaching the business value estimate.

Here is an example of using such a weighting scheme:

Approach	Valuation Method	Value	Weight	Weighted Value
Market	Comparative business sales	\$1,000,000	25%	\$250,000
Income	Discounted Cash Flow	\$1,200,000	25%	\$300,000
Income	Multiple of Discretionary Earnings	\$1,350,000	30%	\$405,000
Asset	Asset Accumulation	\$950,000	20%	\$190,000

The business value is just the sum of the weighted values which in this case equals \$1,145,000.

While there are no hard and fast rules to determine the weights, many business valuation experts use a number of guidelines when selecting the weights for their business value conclusion:

The Discounted Cash Flow method results are weighted heavier in the following situations:

- Reliable business earnings projections exist.
- Future business income is expected to differ substantially from the past.
- Business has a high intangible asset base, such as internally developed products and services.
- 100% of the business ownership interest is being valued.

The Multiple of Discretionary Earnings method gets higher weights when:

- Business income prospects are consistent with past performance.
- Income growth rate forecast is thought reliable.

Market based valuation results are weighted heavier whenever:

- Relevant comparative business sale data is available.
- Minority (non-controlling) business ownership interest is being valued.
- Selling price justification is very important.

The asset based valuation results are emphasized in the weighting scheme when:

- Business is exceptionally asset-rich.
- Detailed business asset value data is available.

Assumptions drive your business valuation results

To make things interesting, there are a number of ways to measure business value. Why such complexity? Because business value is seen differently by different people.

For example, a business owner may believe that the business value is defined by its contribution to the local community it serves. On the other hand, a financially minded investor may gauge a business solely based on its ability to generate desired returns.

Business value does not stand still. Market conditions change all the time and business people may see greater value in companies as their fortunes shift. It is common knowledge that competition for private businesses increases when jobs are scarce as more people enter the business buying market in search of income. This tends to drive up the business selling prices. Supply and demand, anyone?

What is the ultimate test of business value? In short, the market. Beware of oversimplification though. It does make a big difference how the company is marketed. The selling price for a business presented to a well-funded group of strategic investors is likely to be much higher than even the highest bid at an auction for used equipment.

Are business value and expected selling price the same?

Arguably, the reason to figure out business value is to estimate what it would sell for. That's the theory. In practice, the business value could vary quite a bit depending on who wants to know.

For example, a highly motivated business buyer seeking to replace lost income may pay a premium to get that dream business. A financial buyer is the type who plays the low-cost acquisition game.

Market exposure also plays a role here. Getting the business in front of the right buyers is half the battle in fetching the top selling price.

EXAMPLE OF TATA STEEL LIMITED

1. Planning and Data Collection:

Whenever we have to find the value of any company, it is important to decide which data should be used & from where the data is to be extracted. Whenever we are valuing a company, we should take data from Annual Report of the company instead of financial websites as they give more authentic figures which gives us more appropriate result in valuating business worth.

Even when we decide to collect the data from the annual report, we need to now decide whether to use the data from the standalone financial statements or the consolidated financial statements. For Example, Tata Steels reported net sales of Rs 38,199.43 crores in the standalone statements and net sales of 134,711.54 crores in the consolidated financials. The difference can be really substantial for companies that have invested substantially in other subsidiaries.

So to have proper valuation of a company we use standalone financial statements and so we have decided to use the standalone financials for Tata Steel, while valuing its shares.

KEY FINANCIAL FIGURES OF TATA STEEL LIMITED (2009-2013)

INCOME STATEMENT

PARTICULAR	(Figures in Rs Crores)				
	2009	2010	2011	2012	2013
Net Sales	24,348.32	24,940.65	29,396.35	33,933.46	38,199.45
Other Incomes	603.07	1,241.08	1,176.45	1,397.44	227.51
Raw Material Expenses	8,279.44	8,491.42	7,667.82	9,696.65	12,017.03
Wages & Salaries	2,305.81	2,361.48	2,837.46	3,047.26	3,608.52
Power & Fuel	1,222.48	1,383.44	1,558.49	1,990.16	2,510.17
Other Expenses	3,364.15	3,798.72	5,850.29	7,662.62	8,937.47
EBITDA	9,779.51	10,146.67	12,658.74	12,934.21	11,353.75
Depreciation	973.40	1,083.18	1,146.19	1,151.44	1,640.38
EBIT	8,806.11	9,063.49	11,512.55	11,782.77	9,713.37

Interest Expenses	1,489.50	1,848.19	1,735.70	1,925.42	1,876.77
Profit Before Tax	7,316.61	7,215.30	9776.85	9,857.35	7,836.60
Tax Expenses	2,114.87	2,168.50	2,911.16	3,160.93	2,773.63
Profit After Tax	5,201.74	5,046.80	6,865.69	6,696.42	5,062.97
Dividend (Inc. Tax)	1,383.05	832.57	1,307.77	1,347.03	905.70

BALANCE SHEET OF TATA STEEL LIMITED

PARTICULAR	(Figures in Rs Crores)				
	2009	2010	2011	2012	2013
Gross Fixed Assets	23,544.69	26,149.66	28,110.11	39,140.07	46,778.57
Acc. Depreciation	9,062.47	10,143.63	10,692.73	11,715.32	13,181.23
Net Fixed Assets	14,482.22	16,006.03	17,417.38	27,424.75	33,597.34
Inventory	3,480.47	3,077.75	3,953.76	4,858.99	5,257.94
Accounts Receivable	635.98	434.83	424.02	904.08	796.92
Cash & Marketable Securities	1,590.60	3,234.14	4,138.78	3,946.99	2,218.11
Other Current Assets	5,884.61	6,678.55	17,052.84	8,773.73	9,587.82
Total Current Assets	11,591.66	13,425.27	25,569.40	18,483.79	17,860.79
Investments	42,371.78	44,979.67	46,564.94	50,282.52	50,418.80
Current Liabilities	8,965.76	8,699.34	12,037.59	15,958.34	17,098.06
Provisions	2,934.19	3,303.68	4,421.32	3,917.54	3,657.68
Total Current Liabilities	11,899.95	12,003.02	16,458.91	19,875.88	20,755.74
Total Debt	26,946.18	25,239.20	26,148.18	23,693.82	25,911.51
Net Worth	29,704.60	37,168.75	46,944.63	52,621.36	55,209.68

2) Adjusting the Historical Financial Statements

In some cases the owner of the company have considerable discretion in how they use the business assets as well as what income and expenses they recognize, the company historical financial statements may need to be recast or adjusted.

In order to generate inputs for use in business valuation the company used to recast the Financial Statement. Here are the most common adjustments:

- Recasting the Income Statement.
- Recasting the Balance Sheet

But Tata Steel Limited had not done any adjustment and valuation will be done in the factual figures of 5 years.

3) Choosing the Business Valuation Methods

Tata Steel limited had adopted DCF model for the valuation of the company. Now the analyst will decide which method to be used free cash flow (FCF) Method or free cash flow to equity (FCFE) method of valuation.

Free Cash Flow= Gross Cash Flow – Gross Investments

$$= (\text{NOPAT} + \text{Depreciation}) - (\text{Net Investment} + \text{Depreciation})$$

$$= \text{NOPAT} - \text{Net Investment}$$

Let's assume that we value Tata Steel using FCF method. So we will first prepare the historical free cash flow of Tata Steel.

HISTORICAL FCF OF TATA STEEL LIMITED

PARTICULAR	(Figures in Rs Crores)				
	2009	2010	2011	2012	2013
Net Sales	24,348.32	24,940.65	29,396.35	33,933.46	38,199.45
Net Operating Income	8203.04	7,822.41	10,336.10	10,385.33	9,485.86
NOPAT	5,414.83	5,163.57	6,822.86	6,855.36	6,261.62
Gross Cash Flow	6,388.23	6,246.75	7,969.05	8,006.80	7,902.00
Capex		3,688.15	3,106.64	12,181.40	9,278.88
Increase in op. Working Capital		87.00	6,783.60	-10,310.79	226.02
Gross Investment		3,775.15	9,890.24	1,870.61	9,504.90
Free Cash Flow		2,471.60	-1,921.19	6,136.19	-1,602.90

How detailed the forecasting should be?

While projecting the financials of a company, we can either build a very detailed financial model and project each line item one-by-one or build a short financial model and forecast only the key line items.

While valuing the Tata Steel, we can directly forecast its total sales figure by assuming a sales growth rate figure for each year. When analyzing the sales growth of the Tata Steel, it was found that the company was growing at the growth rate of 12%-13% per annum.

For valuing the Tata Steel, let's use an DCF Approach and first start with forecasting of the company.

Forecasted Income Statement for TATA Steel (2014-18)

PARTICULAR	(Figures in Rs Crores)					
	2013	2014E	2015E	2016E	2017E	2018E
Net Sales	38,199.45	42,019.37	46,221.31	51,767.87	59,015.37	67,867.67
Sales Growth Rate	12.57%	10%	10%	12%	14%	15%

Other Income	227.51	227.51	227.51	227.51	227.51	227.51
Raw Material Expenses	12,017.13	13,218.73	14,540.61	16,285.48	18,565.45	21,350.26
% of Sales	31.46%	31.46%	31.46%	31.46%	31.46%	31.46%
Wages & Salaries	3,608.52	3,969.37	4,366.31	4,890.27	5,574.90	6,411.14
% of Sales	9.45%	9.45%	9.45%	9.45%	9.45%	9.45%
Power & Fuel	2,510.17	2,941.36	3,235.49	3,623.75	4,131.08	4,750.74
% of sales	6.57%	7.00%	7.00%	7.00%	7.00%	7.00%
Other Expenses	8,937.47	9,831.22	10,814.34	12,112.06	13,807.75	15,878.91
% of sales	23.40%	23.40%	23.40%	23.40%	23.40%	23.40%
EBITDA	11,353.75	12,286.20	13,492.07	15,083.82	17,163.71	19,704.14
EBITDA Margin	29.72%	29.24%	29.19%	29.14%	29.08%	29.03%
Depreciation	1,640.38	1,965.76	2,291.14	2,400.08	2,917.44	3,044.11
% of GFA	3.51%	3.51%	3.51%	3.51%	4.08%	4.08%
EBIT	9,713.37	10,320.44	11,200.93	12,683.74	14,246.27	16,660.03
% of Sales	25.43%	24.56%	24.23%	24.50%	24.14%	24.55%
Interest of Expenses	1,876.77	2,486.67	3,096.57	3,096.57	3,096.57	3,096.57
Profit Before Tax	7,836.60	7,833.77	8,104.36	9,587.17	11,149.70	13,563.46
% of Sales	20.51%	18.64%	17.53%	18.52%	18.89%	19.99%
Tax Expenses	2,773.63	2,662.70	2,754.67	3,258.68	3,789.78	4,610.22
Average Tax Rate	35.39%	33.99%	33.99%	33.99%	33.99%	33.99%
Profit After Tax	5,062.97	5,171.07	5,349.69	6,328.49	7,359.92	8,953.24
Net Margin	13.25%	12.31%	11.57%	12.22%	12.47%	13.19%
Dividend	905.70	1,034.21	1,069.94	1,265.70	1,471.98	1,790.65
Payout Ratio	17.89%	20.00%	20.00%	20.00%	20.00%	20.00%

Projected Balance Sheet of TATA Steel (2014-18)

	(Figures in Rs Crores)					
PARTICULAR	2013	2014E	2015E	2016E	2017E	2018E
Gross Fixed Assets	46,778.57	56,057.45	65,336.33	68,442.97	71,549.61	74,656.25
Accumulated Depreciation	13,181.23	15,146.99	17,438.14	19,838.22	22,755.65	25,799.76
Net Fixed Assets	33,597.34	40,910.46	47,898.19	48,604.75	48,793.96	48,856.49

Capex	9,278.88	9,278.88	9,278.88	3,106.64	3,106.64	3,106.64
Inventory	5,257.94	5,783.73	6,362.11	7,125.56	8,123.14	9,341.61
% of Sales	13.76%	13.76%	13.76%	13.76%	13.76%	13.76%
Accounts Receivable	796.92	886.47	975.12	1,092.13	1,245.03	1,431.79
% of Sales	2.09%	2.11%	2.11%	2.11%	2.11%	2.11%
Cash & Mktble Securities	2,218.11	22,088.58	32,456.58	39,025.10	47,614.56	58,245.44
Other Current Assets	9,587.82	10,546.60	11,601.26	12,993.41	14,812.49	17,034.37
% of Sales	25.10%	25.10%	25.10%	25.10%	25.10%	25.10%
Total Current Assets	17,860.79	39,305.39	51,395.06	60,236.21	71,795.22	86,053.20
Investments	50,418.80	50,418.80	50,418.80	50,418.80	50,418.80	50,418.80
Current Liabilities	17,098.06	18,807.87	20,688.65	23,171.29	26,415.27	30,377.56
% of Sales	44.76%	44.76%	44.76%	44.76%	44.76%	44.76%
Provisions	3,657.68	4,622.13	5,084.34	5,694.47	6,491.69	7,465.44
% of Sales	9.58%	11.00%	11.00%	11.00%	11.00%	11.00%
Total Current Liabilities	20,755.74	23,430.00	25,773.00	28,865.76	32,906.96	37,843.01
Total Debt	25,911.51	37,311.51	48,711.51	48,711.51	48,711.51	48,711.51
Net Worth	55,209.68	59,346.54	63,626.29	68,689.08	74,577.02	81,739.61

Step 6: Number Crunching: Applying the Selected Business Valuation Methods

How can we find Terminal Value?

Terminal value is found either by using the relative valuation or the DCF method. Tata Steel had used DCF method to calculate the Terminal Value.

The perpetual growth method of calculating a terminal value formula is the preferred method among academics as it has the mathematical theory behind it. This method assumes the business will continue to generate Free Cash Flow (FCF) at a normalized state forever (perpetuity). The formula for calculating the terminal value is:

The formula for calculating the terminal value is:

$$TV = (FCF_n \times (1 + g)) / (WACC - g)$$

Where:

TV = terminal value

FCF = free cash flow

g = perpetual growth rate of FCF

WACC = weighted average cost of capital

Valuation of TATA Steel Limited- The Key Results

	(Figures in Rs Crores)						
PARTICULAR	2012	2013	2014E	2015E	2016E	2017E	2018E
Net Sales	33,933.46	38,199.45	42,019.37	46,221.31	51,767.87	59,015.37	67,867.67
Net Operating Income	10,385.33	9,485.86	10,092.93	10,973.42	12,456.23	14,018.76	16,432.52
NOPAT	6855.36	6,261.62	6,662.35	7,243.56	8,222.36	9,253.78	10,847.10
Gross Cash Flow	8006.80	7902.00	8628.11	9534.70	10,622.44	12,171.22	13,891.21
Capex	12181.4	9278.88	9278.88	9278.88	3106.64	3106.64	3106.64
Increase in Working Capital	-10310.79	226.02	-1100.13	-621.32	-820.14	-1071.65	-1308.94
Gross Investment	1870.61	9504.90	8178.75	8657.56	2286.50	2034.99	1797.70

Calculation of Terminal Value & Intrinsic Value over Share

	(Figures in Rs Crores)						
PARTICULAR	2012	2013	2014E	2015E	2016E	2017E	2018E
Net Sales	33,933.46	38,199.45	42,019.37	46,221.31	51,767.87	59,015.37	67,867.67
Net Operating Income	10,385.33	9,485.86	10,092.93	10,973.42	12,456.23	14,018.76	16,432.52
Free Cash Flow	6136.19	-1602.90	449.36	877.14	8335.94	10,136.23	12,093.52
Terminal Value							258,407.74
Present Value of FCF & Terminal Value		145,902.15					
Add: Cash		2,218.11					
Add: Investments		50,418.80					
Less: Debt		25,911.51					
Equity		172,627.55					
Intrinsic Value over Share		1,777.44					

Step 7: Reaching the Business Value Conclusion

Analysts value a company for various reasons. They value a company to determine if its stock is undervalued or not. Acquiring companies value target companies to determine the acquisition premium that can be paid to the shareholders of the target companies.

The above table shows the valuation of Tata Steel Limited. The cost of capital of Tata Steel Limited is 15.15% & terminal growth rate was 10%. Assumption was taken that debt equity ratio to remain constant at their 2013 level from 2014 onwards. The stock was trading at around Rs 315 in early April, 2013. The DCF Value comes out to be much higher at around Rs 1,800. The market was obviously less optimistic than what the above model suggests. We simply extrapolated the past performance into the future. The valuation is based on the stand-alone financials. Tata's Steel performance outside India is not good. The company reported losses in its consolidated financials. But even if we decide not to add the investment figure of Rs 50,418.8 crores, the intrinsic value per share still comes out much higher at Rs 1,258 crores.

Valuation of stocks or companies is a useful exercise for primarily three types of people.

- 1) It helps medium to long term investors in deciding whether a stock is properly priced in the market.
- 2) Valuation of the target company is a necessary input for the acquiring company, irrespective of whether the merger is financed with cash or stock.
- 3) Valuation Techniques can help us assess the impact of any corporate decision like corporate restructuring, share buyback, etc., on the stock price of the company.

This proves to be a useful tool for corporate finance executives in the company and valuation consultants.

SUMMARY

- Business Valuation is the key to determining the value or worth of a business.
- Business valuation is a process and a set of procedures used to estimate the economic value of an owner's interest in a business.
- Business Valuation gives the ability to owners to create a practical timeline for the potential sale of business and for other exit strategies.
- To determine the buy-out price and fund it with adequate insurance, it is necessary to know how much the business is worth.
- Business valuation is a process that follows a number of key steps starting with the definition of the task at hand and leading to the business value conclusion.
- The five steps to establish business worth are Planning and preparation, Adjusting the financial statements, Choosing the business valuation methods, Applying the selected valuation methods & Reaching the business value conclusion
- A successful business takes planning and disciplined effort; effective business valuation requires organization and attention to detail.
- You plan to sell your business to the highest and most suited bidder and it will continue running under the new ownership.
- In this scenario you have a synergistic buyer who is applying the so-called investment standard of measuring your business value.
- Since business owners have considerable discretion in how they use the business assets as well as what income and expenses they recognize, the company historical financial statements may need to be recast or adjusted.

- Once your data is prepared, it is time to choose the business valuation procedures.
- All known business valuation methods fall under one or more of these fundamental approaches Asset approach, Market approach & Income approach.
- With the results from the selected valuation methods available, you can make the decision of what the business is worth. This is called the business value synthesis.
- Business valuation experts generally use a weighting scheme to derive the business value conclusion.

SELF TEST QUESTIONS

- Ques 1 Jolly wants to open a pizza outlet in IIT Mumbai campus. How can she price the pizza using absolute valuation method? How can she use relative valuation method to price the pizza? Which one makes more sense here?
- Ques 2 Explain the steps to establish the business worth of a company?
- Ques 3 Explain the methods of Business Valuation with the help of an example ?
- Ques 4 How can the company find the terminal value and what is the usage of terminal value?
- Ques 5 When we have to collect the data for forecasting what should be source of data?
- Ques 6 Explain the uses of valuation?
- Ques 7 You have started a dot.com company called idly-vada.com. It does door delivery of South Indian snacks in Bangalore. In the first year, your compny generated a net sales of Rs 3,500 and a net loss of Rs 28,000. You want to sell the company after one year. Which valuation method will you use to value the company?

LIST OF FURTHER READINGS

1. Business Analysis & Valuation: Using Financial Statement by Krishna G. Palepu , published by Cengage Learning
2. Damodaran on Valuation by Aswath Damodaran, published by Wiley
3. Determining Value: Valuation Models & Financial Statement by Richard Barkar, published by Prentice Hall.

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2. "Capitaline Databases", Retrieved from www.capitaline.com
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4. How to Value a Business: The Ultimate Guide to Business Valuation, retrieved from <https://fitsmallbusiness.com/how-to-value-a-business/>
5. How to Estimate the Net Worth of a Company, retrieved from <https://smallbusiness.chron.com/estimate-net-worth-company-21388.html>
6. What is the value of my business? Retrieved from <https://www.calcxml.com/calculators/business-valuation>
7. Business Valuation: the Three Approaches, retrieved from <https://www.valuadder.com/valuationguide/business-valuation-three-approaches.html>
8. Five steps to establish your business worth, retrieved from <https://www.valuadder.com/valuationguide/business-valuation-five-steps.html>

Lesson 7

Valuation of Tangibles

LESSON OUTLINE

- Concept of Value and Valuation
- Valuation Approaches
- Valuation of Plant & Machinery
- Valuation of Vehicles
- Valuation of Ships & Barges
- SUMMARY
- SELF TEST QUESTIONS

LEARNING OBJECTIVES

Tangible assets play a pivotal role in execution of business and operations. Whether a company belongs to manufacturing or services sector, tangible assets are an indispensable component.

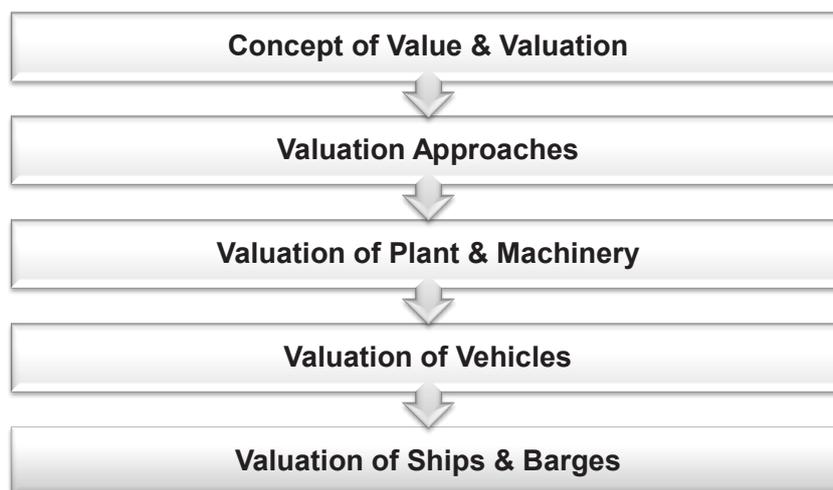
In view of the paramount significance tangible assets hold, it generates substantial academic interest to delve deep into various vital concepts relating to tangible assets.

After studying this lesson one will be conversant with concept of value & valuation, valuation approaches, valuation of various forms of fixed assets etc.

ORIENTATION

This study lesson requires an expert level 4 knowledge, as it offers a comprehensive understanding on crucial facets of valuation of tangibles. This lesson has focused on valuation of significant fixed assets and various accounting standards pertaining to valuation of tangibles.

FAMILY TREE OF CONCEPTS



INTRODUCTION

Concept of “Value” & “Valuation

The fundamental principle behind valuation be it of a share, a bond, or any asset is that, an endeavour is made to ascertain the present value of all expected benefits that emanate from the asset in future should be equivalent to the price that an investor is willing to pay for acquiring the stock / bond / any asset for that matter. Thus, valuation is the process of determining the current worth of an asset.

It is pertinent to note that the term “value” could have a number of connotations, and it could vary depending upon the type of transaction involving valuation, the parties involved, the purpose for which it is required and whether regulated or otherwise.

The below are a few forms of Values that could be estimated depending upon the specific situation / purpose at hand:

i) **Book Value:** An asset’s book value is equal to its carrying value on the balance sheet, and companies calculate it netting the asset against its accumulated depreciation. Book value is also the net asset value of a company calculated as total assets minus intangible assets (patents, goodwill) and liabilities. For the initial outlay of an investment, book value may be net or gross of expenses such as trading costs, sales taxes, service charges and so on.

Book value is also known as “net book value” and, in the U.K., “net asset value.” As the accounting value of a firm, book value has two main applications:

1. It serves as the total value of the company’s assets that shareholders would theoretically receive if a company were liquidated.
2. When compared to the company’s market value, book value can indicate whether a stock is under- or overpriced.

In personal finance, the book value of an investment is the price paid for a security or debt investment. When a company sells stock, the selling price minus the book value is the capital gain or loss from the investment.

ii) Salvage Value: Salvage value is the estimated resale value of an asset at the end of its useful life. Salvage value is subtracted from the cost of a fixed asset to determine the amount of the asset cost that will be depreciated. Thus, salvage value is used as a component of the depreciation calculation.

For example, ABC Company buys an asset for \$100,000, and estimates that its salvage value will be \$10,000 in five years, when it plans to dispose of the asset. This means that ABC will depreciate \$90,000 of the asset cost over five years, leaving \$10,000 of the cost remaining at the end of that time. ABC expects to then sell the asset for \$10,000, which will eliminate the asset from ABC's accounting records.

If it is too difficult to determine a salvage value, or if the salvage value is expected to be minimal, then it is not necessary to include a salvage value in depreciation calculations. Instead, simply depreciate the entire cost of the fixed asset over its useful life. Any proceeds from the eventual disposition of the asset would then be recorded as a gain.

The salvage value concept can be used in a fraudulent manner to estimate a high salvage value for certain assets, which results in the under-reporting of depreciation and therefore of higher profits than would normally be the case. Salvage value is not discounted to its present value.

iii) Original Cost: Original cost is the total price associated with the purchase of an asset. The original cost of an asset takes into consideration all of the items that can be attributed to its purchase and to putting the asset to use. These costs include the purchase price and such factors as commissions, transportation, appraisals, warranties and installation and testing. Original cost can be used to value an asset type, including equipment, real estate and security instruments.

Original cost includes all quantifiable aspects of a purchased asset. For example, a company purchases a piece of equipment with a price tag of \$20,000. The purchase also involves \$1,000 in fees, \$700 in shipping and delivery costs, and \$3,000 for installation and warranty. The original cost of this piece of equipment would be $\$20,000 + \$1,000 + \$700 + \$3,000 = \$24,700$. Also known as historical cost, a common term in generally accepted accounting principles (GAAP), this is the original cost recorded on the balance sheet. The balance sheet and notes to financial statements will separate historical cost property, plant and equipment (PP&E) and accumulated depreciation of these long-term assets. The difference is known as carrying value.

Finding out of an asset's historical cost is essential in calculating the asset's tax basis. The original cost of an asset encompasses more than the asset's purchase price, and the costs added together can reduce the potential taxable gain on the sale of the asset. The tax basis can be calculated by taking the original cost and subtracting the accumulated depreciation of the asset. For the piece of equipment above, suppose accumulated depreciation is \$14,700. The carrying value on the company's books would be \$10,000 (\$24,700 original cost less \$14,700 accumulated depreciation). If the company sells the asset for \$15,000, it would record a gain on asset sale of \$5,000.

iv) Written Down Value: Written-down value is the value of an asset after accounting for depreciation or amortization. It is calculated by subtracting accumulated depreciation or amortization from the asset's original value, and it reflects the asset's present worth from an accounting perspective.

Written-down value can be calculated by a method of depreciation that is sometimes called the diminishing balance method. This accounting technique reduces the value of an asset by a set percentage each year. Different depreciation techniques also exist in accounting and are used to capitalize the expenses of different types of asset.

The written-down value of a depreciated asset is vital because it is included in the comprehensive value of a company's total assets. Depreciated assets typically start on the books at their purchased price and are often sold before they are depreciated to zero. The depreciated value of an asset is also important in assisting to

compute the selling price of the asset. When selling the asset, the book value is used to help determine the minimum value for which it will be sold. Real assets typically sell for a price range within their book value and the highest fair market value. If a gain occurs from the sale of an asset, it will be taxable in most cases. The taxable gain on a sale is often determined by comparing the sales from the item to its written-down value.

v) Replacement Value: Replacement cost or value is the cost to replace an asset of a company at the same or equal value, where the asset to be replaced could be a building, investment securities, accounts receivable or liens. The replacement cost can change, depending on changes in market value of the asset and any other costs required to prepare the asset for use. Accountants use depreciation to expense the cost of the asset over its useful life.

Replacing an asset can be an expensive decision, and companies analyze the net present value (NPV) of the future cash inflows and outflows to make purchasing decisions. Once an asset is purchased, the company determines a useful life for the asset and depreciates the asset's cost over the useful life.

vi) Fair Value: Fair value is the sale price agreed upon by a willing buyer and seller, assuming both parties enters the transaction freely and knowledgeably. Many investments have a fair value determined by a market where the security is traded. Fair value also represents the value of a company's assets and liabilities when a subsidiary company's financial statements are consolidated with a parent company.

The most reliable method to ascertain an investment's fair value is to list the security on an exchange. If XYZ stock trades on an exchange, market makers provide a bid and ask price for XYZ stock. An investor can sell the stock at the bid price to the market maker and buy the stock from the market maker at the ask price. Since investor demand for the stock largely determines bid and ask prices, the exchange is the most reliable method to determine a stock's fair value.

vii) Net Realisable Value: The net realizable value (NRV) of an asset is the money a seller expects to receive for the sale of an asset after deducting the costs of selling or disposing of the asset.

For instance, Company XYZ needs to get rid of a widget maker. It expects to sell the asset for \$10,000. It must pay a broker \$600 for help in the sale, \$50 in legal paperwork costs and \$200 to deliver the asset to the buyer. Thus, Company XYZ's net realizable value on the asset is: $\$10,000 - \$600 - \$50 - \$200 = \$9,150$

Analysts sometimes incorporate the future cash inflows associated with the assets and calculate the present value of the cash inflows and outflows in order to determine NRV.

NRV is applied while using the lower of cost or market (LCM) method of inventory accounting. It is also used when trying to calculate how much of a company's accounts receivables are truly expected to turn into cash (that is, when determining bad debt expense).

viii) Market Value: Market value refers to the current or most recently-quoted price for a market-traded security. It can also refer to the most probable price an asset, like a house, would fetch on the open market.

The market value of an asset is determined by fluctuations in supply and demand. It should be noted that market value represents what someone is willing to pay for an asset -- not the value it is offered for or intrinsically worth.

For example, say a person is selling their house for \$300,000. However, no one is willing to buy the home for more than \$250,000. In this case, even though the house is being offered at a higher price, its market value is \$250,000.

One of the most important factors when purchasing a security is its market value. Many investors (especially value investors) pick securities or assets based on disconnects between market value and what they perceive the security is worth, hoping they might have uncovered a future star for a discount price.

ix) Economic Value: Economic value is the maximum amount a consumer is willing to pay for an item in a free market economy. Alternatively, it is the amount of time an individual will sacrifice waiting to obtain a government-

rationed good in a socialist economy. In contrast, market value represents the minimum amount a consumer will pay. Economic value, thus, often exceeds market value.

The economic value of a good or service is determined by the preferences of a given population and the trade-offs its members make given their resources. Economic value is also directly correlated to the value that any given market places on an item.

x) **Residual Value** : In accounting, the residual value is an estimated amount that a company can acquire when they dispose of an asset at the end of its useful life. In order to find an asset's residual value, you must also deduct the estimated costs of disposing the asset.

The residual value of an asset is usually estimated as its fair market value, as determined by agreement or appraisal.

For example: Let's say a machine costing \$15,000 has an estimated service life of 10 years, and at the end of its service life it can be sold as scrap metal to the dump for \$2,000. If the cost of transporting the machine to the dump is \$100, then the residual value of the machine is \$1,900 (\$2,000 value – \$100 transportation costs).

Valuation in context of the “Goal” of Financial Management

A business organization has several goals and objectives, often seen as paths to a common destination, that is, all the goals converge to the critical goal of 'maximisation of shareholders' wealth'.

Hence, when we are studying the “valuation” in the context of business, the realm of analysis becomes fairly wide to include not only the current, but also the past performance and future prospects. It is also extremely imperative to conduct a thorough and holistic assessment of the assets and resources of the company, both tangible and intangible in order to ascertain the future earning capabilities of the company.

Business Valuation is a fascinating topic, as it requires an application of financial techniques, modelling skills to estimate “value” and when it comes to merger and acquisitions, it also requires extremely good influencing and negotiating skills, which would be needed to price the deal.

To set the tone of the material going forward, hence, it is quite logical to state that the students must get familiar and thorough with the various methods and techniques to be adopted for valuation, the pros and cons of each alternative and to be able to zero down upon the most appropriate method given the specific situation at hand.

Written Valuation Reports

Written Valuation Reports must adequately and effectively summarise the appraisal / assessment procedures, the methodology adopted and must certainly comprise of:

- a) A background of the Company / Asset under valuation.
- b) The chosen valuation method, it's appropriateness to the Company / Asset and the purpose and the circumstance at hand.
- c) The methodology in detail, referring to the source data and information.
- d) The reliance placed on any other business document.
- e) Qualitative assessment.
- f) Quantitative assessment.
- g) The limitations or constraints the appraisal process went through and the extent to which this may or may not have impacted the valuation.
- h) The certificate of valuation.
- i) The credentials and the qualifications of the valuer.

VALUATION APPROACHES

A valuation approach is the methodology used to determine the fair market value of a business. The most common valuation approaches are: Income Approach, Market Approach and Asset-based approach.

Income Approach

One of the most widely used approaches for Valuation of Tangible Assets is the Income Approach. Free cash flow is essentially the quantum of funds available to pay interest, dividends, and principal payments to debt and equity investors. Free cash flow to equity represents specifically the funds available for distribution to common stock investors, i.e. common stock dividends.

Under the Income Approach, the *direct capitalization method* and the *discounted cash flow method (DCF)* are two income approaches used to appraise a commercial and income producing asset.

The driver for the income approach is the Net Operating Income after taxes (NOPAT), which is essentially EBIT (1-T), that is post tax operating profits. Another driver widely used is the Cash Flows After Taxes (CFAT), i.e. PAT + Depreciation, which is essentially the Net Income or the Profits after taxes after adding back the non-cash items like depreciation.

Let us take for an example, that the Company XYZ Ltd. is investing in a fixed asset and wants to appraise and value the estimated capital investment which will enable them to take an informed decision around the price it should pay for the Capital Investment (Fixed Asset).

For this purpose, the company prepares the forecasts around:

- o Revenues
- o Variable Costs
- o Fixed Operating Costs
- o Tax Rates
- o Discounting Rate

The discounting rate is used to derive the Present Value (PV) of the Cash Flows and is typically the Weighted Average Cost of Capital (WACC). The rationale is quite simple, the funds borrowed by a Company to finance its business, operations, assets and projects have a cost associated with them and the company want to make sure that the asset being contemplated fetches the Cost of Capital (bare minimum).

Let us take a more detailed look at the illustration solved below:

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Forecasted Revenues with a 5% YOY Growth Rate	100.00	105.00	110.25	115.76	121.55	127.63	134.01	140.71	147.75	155.13
Variable Costs (40% of Revenues)	40.00	42.00	44.10	46.31	48.62	51.05	53.60	56.28	59.10	62.05
Contribution	60.00	63.00	66.15	69.46	72.93	76.58	80.41	84.43	88.65	93.08
Fixed Operating Costs	20.00	20.00	20.00	25.00	25.00	25.00	30.00	30.00	30.00	30.00
EBIT (Operating Profits)	40.00	43.00	46.15	44.46	47.93	51.58	50.41	54.43	58.65	63.08
Taxes (@ 30%)	12.00	12.90	13.85	13.34	14.38	15.47	15.12	16.33	17.59	18.92
Net Operating Profit after taxes (NOPAT) ----- 1	28.00	30.10	32.31	31.12	33.55	36.10	35.28	38.10	41.05	44.16
Discounting Factors @ the Disc Rate (11%) ----- 2	0.901	0.812	0.731	0.659	0.593	0.535	0.482	0.434	0.391	0.352
Present Value of the Cash Flows ----- (1 X 2)	25.23	24.43	23.62	20.50	19.91	19.30	16.99	16.53	16.05	15.55
Expected Value of the Fixed Asset	198.12									

This is a classic example of how the *Discounted Cash Flow* technique could be utilised to value a tangible asset (existing or proposed).

Let us take a closer look at the *direct capitalization method*. Typically, under this method, the earnings are capitalised to arrive at the value of the asset or property.

This method is used when the operating earnings are assumed to be stable until perpetuity and when for some reason it may not be feasible to forecast the earnings and the growth.

Typically, the current levels of NOI (Net Operating Income) are capitalised using a growth implicit capitalisation rate.

Let us look at a property (like an apartment building) as a tangible asset, which has units (rooms) which are leased out, the diagram below explains how the NOI is calculated or rather arrived at.

	Rental Income @ full Occupancy
Add:	Other Income
	Potential Gross Income (PGI)
Less:	Vacancy & Collection Loss
	Effective Gross Income (EGI)
Less:	Property Management Expenses (10%)
	Operating Expenses (40%)
	Net Operating Income (NOI)

Note:

- The potential gross income is the income assuming full occupancy, and hence the word “potential”

- b) The effective gross income incorporates the vacancy and collection losses
- c) The operating expenses are reduced from the EGI to arrive at the NOI.

Let us take an example, a 100-room apartment building that rents @ Rs 50,000 per unit per month, and currently has 80 units that are rented.

Operating expenses, including property taxes, insurance, maintenance, and advertising are typically @ 35% of EGI. The property manager is paid @ 15% of EGI.

Other incomes generated from parking and laundries are expected to be Rs 2500 per unit per month.

The NOI can be estimated as under:

	<u>Units</u>	<u>Per Month</u>	<u>Rented</u>
	100	50,000	80
		Rental Income @ full Occupancy	6,00,00,000
Add:		Other Income	30,00,000
		Potential Gross Income (PGI)	6,30,00,000
Less:		Vacancy & Collection Loss	1,26,00,000
		Effective Gross Income (EGI)	5,04,00,000
Less:		Property Management Expenses (15%)	75,60,000
		Operating Expenses (35%)	1,76,40,000
		Net Operating Income (NOI)	2,52,00,000

Now assume that the investors of the property expect a return @ 9% p.a. The value of the property can be derived as follows:

Value = NOI / Capitalisation Rate

Hence, Value of the property is 2,52,00,000 / 9%, which is Rs INR 28,00,00,000.

An extension of the DCF approach, as a part of the Income Approaches, is the *Terminal Value (TV)* approach.

The concept is quite simple and logical, say a company develops the sales and expenses forecasts for the immediate future, say 5 years and thereafter the Free Cash Flows (FCF's) are expected to stabilise for the company until perpetuity, then at the end of the year where the forecasting ends and the stable perpetuity begins the TV (Total Value) is calculated and all the FCF's are discounted to arrive at the PV, which is the value of the property / tangible asset in question.

At this juncture, it becomes critical to understand the concept of Free Cash Flow that could take two forms, Free Cash Flow to the Firm (FCFF) and Free Cash Flow to Equity (FCFE).

Free Cash Flow to the Firm (FCFF) is the cash flow that is available to a company's suppliers of debt and equity capital after the company has paid all its operating expenses and made the required investments in fixed capital and working capital. It is computed according to the following equation:

$$FCFF = NI + NCC + Int (1 - Tax\ rate) - FCInv - WCInv$$

Where:

NI = Net income

NCC = Non-cash charges

Int = Interest expense

FCInv = Capital expenditures

WCInv = Working capital expenditures

Alternatively, the equation can be re-written as:

$$\text{FCFF} = \text{CFO} + \text{Int} (1 - \text{Tax rate}) - \text{FCInv}$$

Where *CFO* represents cash flow from operating activities in the case, which is nothing but the Net Income, adding back the non-cash items like depreciation and then making the *WC* adjustments.

Free Cash Flow to Equity (FCFE) refers to the cash flow that is available to a company's common stockholders after the company has paid all its operating expenses and borrowing costs and made the required investments in fixed capital and working capital. It is computed according to the following equation:

$$\text{FCFE} = \text{CFO} - \text{FCInv} + \text{Net borrowings}$$

Alternatively, the *FCFE* can also be expressed in terms of *FCFF* as under:

$$\text{FCFE} = \text{FCFF} - \text{Int} (1 - \text{Tax Rate}) + \text{Net borrowings}$$

A positive *FCFE* implies that the company has more operating cash flow than it needs to cover capital expenditures and the repayment of debt, and therefore has cash available for distribution to shareholders.

Let us take for an example, a firm wants to do a valuation of its tangible asset base. The starting point should be the financials of the current Financial Year. Post that, the next step is building up the forecasts, for both:

- a) The Income Statement or Statement of Financial Performance (P&L)
- b) The Statement of Financial Position (B/S)

It is also important to understand that this valuation exercise also entails reliance upon a set of assumptions that the forecasts have been built upon, for example:

- a) The growth rate of revenues on year on year (YOY) basis.
- b) The P/V Ratio
- c) The Risk-Free Rate
- d) The β
- e) The Market Risk Premium
- f) The Growth Rates beyond the forecasting period for computation of Terminal Value
- g) The model may assume constant depreciation and interest which may not be viable

Note: Terminal Value (TV) has been calculated at the end of the forecasting period assuming a growth rate for the *FCFF*'s until perpetuity.

The Growth rate ("g") has been assumed @ 6% and the Discount Rate (WACC) has been assumed @ 12%.

P& L Forecasts

Particulars	Current	Y1	Y2	Y3	Y4	Y5
Forecasted Revenues with a 10% YOY Growth Rate	400.0	500.0	550.0	605.0	665.50	732.05
Variable Costs (60% of Revenues)	240.0	300.0	330.0	363.0	399.30	439.23
Contribution (EBITDA)	160.0	200.0	220.0	242.0	266.20	292.82
Depreciation @10% of asset base	80.0	100.0	110.0	121.0	133.10	146.41
Interest (Finance Cost) @11% of Debt Capital	53.90	61.60	67.76	74.54	81.99	90.19
PBT	26.10	38.40	42.24	46.46	51.11	56.22
Taxes @ 30%	7.83	11.52	12.67	13.94	15.33	16.87
Net Income (PAT)	18.27	26.88	29.57	32.52	35.78	39.36
Add:						
Non Cash Charges (Depreciation)		100.0	110.0	121.0	133.10	146.41
Interest (1- Tax Rate)		43.12	47.43	52.18	57.39	63.13
Fixed Capital Investments		100.0	60.0	66.0	72.6	79.86
WC adjustments		-	20.0	22.0	24.20	26.62
Free Cash Flow to the Firm (FCFF)		70.0	107.0	117.70	129.47	142.42
Terminal Value (TV) assuming a 6% growth rate						2,516.03 = FCFF5 * (1 +g) / WACC-g
Discounting Factors @12%		0.893	0.797	0.712	0.636	0.567
PV of FCFF's		62.50	85.30	83.78	82.28	1508.48

Valuation of Tangible Assets Form = INR 1,822.33

Balance Sheet Forecasts

Particulars	Current	Y1	Y2	Y3	Y4	Y5
Current Assets	300.0	400.0	440.0	484.0	532.40	585.64
Capital Investments	500.0	600.0	660.0	726.0	798.60	878.46
Asset Base	800.0	1,000.0	1,100.0	1,210.0	1,331.0	1,464.10
Current Liabilities	100.0	200.0	220.0	242.0	266.20	292.82

Debt	490.0	560.0	616.0	677.60	745.36	819.90
Equity	210.0	240.0	264.0	290.40	319.44	351.38
Liability Base	800.0	1,000.0	1,100.0	1,210.0	1,331.10	1,464.10

Steps in the DCF Approach

The use of a DCF approach for tangible assets, especially properties, is intuitively appealing. The general steps to a DCF analysis are as follows:

- Projection of income from existing assets and properties
- Make assumptions about contract renewals
- Make assumptions about operating expenses
- Estimate the working capital infusions required
- Estimate the capital expenditures required
- Select appropriate discount rate to find PV of cash flows

Advantages & Disadvantages of applying the Income Approach

We have seen that there are many ways of applying the income approach, ranging from a relatively simple application of a cap rate with direct capitalization to a more advanced DCF analysis that involves projecting cash flows over a holding period and then forecasting the stable cash flows to perpetuity.

The *advantages* of the more complex DCF approach are:

- I. It captures the cash flows that investors actually care about.
- II. It takes cognizance of the fact that money changes value over time.
- III. This approach does not depend on current transactions from comparable sales as long as we feel that we can select an appropriate discount rate

The *disadvantages* of the DCF approach are:

- I. Detailed information is needed for building up the forecasts
- II. Selecting an appropriate discount rate is critical, as is arriving at an appropriate terminal value. Small variations in assumptions can have a significant impact on the value
- III. There could be a lot of assumptions and if there is a change in any of these assumptions (independent variables), that could have a significant impact on the estimated value of the Asset (Dependant Variable)

Cost Approach

The cost approach involves estimating the value of the building(s) based on adjusted replacement cost. The estimated value of the land (usually from a sales comparison approach) is added to the estimated value of the building (usually from a cost approach) to arrive at the estimated total value of the property. To determine the value of the building, the replacement cost, assuming it was built today using current construction costs and standards, is first estimated. This replacement cost is then adjusted for different types of depreciation (loss in value) to arrive at a depreciated replacement cost.

The first type of depreciation is for physical deterioration, which is generally related to the age of the property because components of the property wear out over time. There are two types of physical deterioration: curable and incurable. Curable depreciation would refer to situations wherein fixing the problem will add value that is at least as great as the cost of the cure. For example, replacing a roof might increase the value of the property

by at least as much as the cost of doing so and, therefore, is curable. On the other hand, fixing a structural problem with the foundation of the building may cost more to cure than the amount of installing a new structure, that is curing process may result into steep rise in the value of the property. Such a scenario is considered as incurable deterioration.

The replacement cost estimate for the property assumes it is a new building and there is no obsolescence, that is, it is the value assuming nothing needs to be cured. *Thus, the cost of fixing any curable items would have to be deducted from the replacement cost.* A prospective purchaser would not pay as much for a property that had items that need to be fixed and would likely deduct the cost of fixing them from the purchase price.

After deducting the cost of fixing curable items from the replacement cost of the property, a deduction still has to be made for incurable depreciation. A buyer would pay less for a building that is older and has wear and tear. *Because incurable depreciation by definition would not be feasible to fix because it does not increase value as much as the cost to fix, we would not deduct the cost of fixing it from the replacement cost.* Rather, appraisers try to estimate how a property's age is likely to affect its value. A simple way that is often used to estimate this depreciation is to base it on the effective age of the property relative to its economic life. The effective age can differ from the actual age if it has more or less than the normal amount of wear and tear. For example, if the property has an effective age of 10 years and its economic life is usually 50 years, then the physical depreciation is assumed to be 10/50 or 20 percent. This ratio (effective age / economic value) is applied to the value calculated above, which is after subtracting the curable depreciation from the replacement cost so as to not double count, to incorporate the effect of incurable depreciation. That is, we have already accounted for the loss in value due to curable depreciation.

The second type of depreciation is referred to as functional obsolescence. It is a loss in value due to a design that is different from that of a new building constructed with an appropriate design for the intended use of the property. This could result from changes in design standards since the building was constructed or because the building had a poor design to start, even if it were a relatively new building. Functional obsolescence usually results in the building generating less NOI than it otherwise would because the building may be less efficient and have a higher operating expense or may not command as much rent as a building with the proper design. The amount of functional obsolescence is often estimated by the present value of the income loss due to the obsolescence. For example, suppose an office has a poorly designed elevator system such that there tends to be unusually long waiting times for tenants and visitors to use them. This situation affects the types of tenants that are willing to rent space in the building, and the rent is less than it would be if the elevators had greater capacity. The appraiser determines that this design flaw likely reduces NOI by about \$25,000 per year. An 8 percent cap rate is considered appropriate to estimate the value of the property. This cap rate can be applied to the \$25,000 loss in NOI due to the poor elevator design to arrive at a \$312,500 loss in value due to functional obsolescence. This amount is deducted from the replacement cost.

Finally, there is depreciation that is external to the property. This external obsolescence is due to either the location of the property or economic conditions. *Locational obsolescence results when the location is not optimal for the property.* It usually occurs because something happens after the building was constructed that changes the desirability of the location for the existing use; the existing use may no longer be the highest and best use of the site.

For example, a luxury apartment building is on a site where the highest and best use when it was first developed was to construct the luxury apartment. But perhaps after the apartment was constructed, a manufacturing plant that was allowed by the zoning was built on a nearby site, and this made the location much less desirable for a luxury apartment building. That is, a luxury apartment building is no longer the highest and best use of the site. Perhaps now the highest and best use is an apartment building that would have lower rents and appeal to people working at the manufacturing plant.

After the manufacturing plant was built, rents had to be lowered on the apartment building currently on the site. Thus, its value is lower than it would be on a site where the highest and best use is still a luxury apartment building. Suppose the decline in the value of the apartment building (land and building) is \$200,000. This amount is the total loss in value due to the manufacturing plant. But some of this loss in value would show up in the land value being lower, which would be reflected in comparable land sales taking place after the manufacturing plant was built being lower than before it was built and lower at better locations. For example, a vacant site near the manufacturing plant would have sold for \$100,000 before the manufacturing plant was built but would now sell for \$75,000 to be used for low-income housing. Thus, some of the loss in value of the property would already be reflected in the lower land value, and this portion does not have to be deducted from the replacement cost of the building.

The land value for the existing luxury office building near the manufacturing plant would be \$75,000 based on its use for lower-income apartments if vacant. Because the land value reflects a \$25,000 loss in value, the amount of locational obsolescence attributed to the building would be the \$200,000 total decline in value less the \$25,000 attributed to the land or \$175,000. Thus, \$175,000 is deducted from the replacement cost of the building in the cost approach.

Economic obsolescence results when new construction is not feasible under current economic conditions. This usually occurs when rent levels are not sufficiently high to generate a value for a newly constructed property that is at least equal to the development costs (including a profit to the developer). Thus, the replacement cost of the new property exceeds what it would really be worth if it were developed. In this situation, even a new building would have a loss in value.

Let us take a 12-year-old industrial property that is being valued using the cost approach. The appraiser feels that it has an effective age of 15 years based on its current condition. For example, there are cracks in the foundation that are not feasible to repair (incurable physical depreciation). That is, it would cost more to try to repair these problems than the value that would be created in the property. The appraiser believes that it has a 60-year remaining economic life (75-year total economic life).

The building was constructed using a greater ceiling height than users require in the current market (superadequacy). It would cost \$27 million to reproduce (reproduction cost) the building with the same ceiling height but \$25 million to construct a replacement property (replacement cost) with the same utility but a normal ceiling height.

The higher ceiling results in increased heating and air-conditioning costs of \$50,000 per year. A cap rate that would be used to value the property would be 10 percent.

The building was designed to include a cafeteria that is no longer functional (functional obsolescence). This area can be converted to usable space at a conversion cost of \$25,000, and it is believed that the value of the property would increase by at least this amount (curable functional obsolescence).

The roof needs to be replaced at a cost of \$250,000, and other necessary repairs amount to \$50,000. The costs of these repairs will increase the value of the building by at least their \$300,000 cost (curable physical depreciation).

The road providing access to the property is a two-lane road, whereas newer industrial properties are accessible by four-lane roads. This has a negative impact on rents (locational obsolescence), which is estimated to reduce NOI by \$100,000 per year.

Based on comparable sales of vacant land, the land is estimated to be worth \$5 million.

Let us now estimate the value using the cost approach.

Replacement Cost (to current standards)			2,50,00,000
<u>Curable Deterioration</u>			
Roof	2,50,000		
Repairs	<u>50,000</u>		
Physical Deterioration (Curable)		3,00,000	
Replacement cost net of Curable Depreciation			2,47,00,000
Physical Deterioration (Incurable)		49,40,000	
<u>Functional Obsolescence</u>			
Curable		25,000	
Incurable		5,00,000	
Locational Obsolescence		<u>10,00,000</u>	
Total depreciation (after curable physical wear and tear)			<u>64,65,000</u>
Depreciated Cost of Building			1,82,35,000
Land Value			<u>50,00,000</u>
Total Value of Property			<u>2,32,35,000</u>

Notes:

- a) Note that the replacement cost that's considered relevant is the cost that would need to build the building (property) to current standards
- b) Note how the curable physical depreciation has been reduced to arrive at the net replacement cost
- c) The incurable physical depreciation is $15 / 75 \times$ Net Replacement Cost, i.e.; Effective Life / Total Economic Life
- d) Incurable Functional Depreciation is arrived at by dividing $50000 / 10\%$ (annual increased heating and air-conditioning costs capitalized)
- e) Locational Obsolescence is arrived at by dividing $100,000 / 10\%$ (reduction in NOI capitalized)

The **sales comparison approach** implicitly assumes that the value of a property depends on what other comparable properties are selling for in the current market. Ideally, the comparables would be exactly the same as the subject property in terms of size, age, location, quality of construction, amenities, view, and so on, and would be sold on the same date as the date of the appraised value. Obviously, this is impossible, so adjustments have to be made to each of the comparables for differences from the "subject" property due to these factors. The idea is to determine what the comparables would have sold for if they were like the subject property.

Look at the example below. There have been sales of five comparable properties within the last year. They are similar to the subject property, but there are always some differences that need to be accounted for. The idea is to determine how much each of the comparables would have sold for if they were exactly the same as

the subject property. Calculating the price per square foot (or square meter) is often a good way to account for differences in size, although other measures of size may be appropriate in some cases, such as cubic feet (or cubic meters) for a warehouse or number of units in an apartment building.

Next, the price per square foot is adjusted for each of the comparables. For example, Comparable 1 is in good condition. The subject property is in only average condition. Thus, we lower the price per square foot of the comparable to determine what it would have sold for if it were in only average condition like the subject property. Each comparable is adjusted to what it would sell for if its location, condition, age, and time of sale were the same as the subject property. Notice that after these adjustments, the range in price per square foot is tighter across the five comparables.

In this example, we average the price per square foot for each of the comparables, although in many cases more weight may be given to comparables that the appraiser feels are more similar to the subject property or where they feel more confident in the adjustments. We multiply this price per square foot by the square feet of the subject property to arrive at our estimate of value using the sales comparison approach.

Variable	Subject Property	Comparables				
		1	2	3	4	5
Size (square feet)	15,000	25,000	20,000	10,000	16,000	12,500
Age (years)	10	1	5	10	15	20
Condition	Average	Good	Good	Good	Average	Poor
Location	Prime	Prime	Secondary	Secondary	Secondary	Prime
Date of sale (months ago)		3	9	6	7	12
Sale price		\$5,500,000	\$3,000,000	\$1,300,000	\$1,750,000	\$1,300,000
Sale price psf		\$220	\$150	\$130	\$109	\$104

Look at the below working to understand how we arrive at the value of the subject property.

	Subject Property	1	2	3	4	5
Age	10	1	5	10	15	20
Adj. owing to differences in age		-22.5%	-12.5%	-	12.5%	0.25
Condition	Average	Good	Good	Good	Average	Poor
Adj. owing to differences in condition		-10%	-10%	-10%	-	10%
Location	Prime	Prime	Secondary	Secondary	Secondary	Prime
Adj. owing to differences in location		0%	20%	20%	20%	0%
Date of Sale (months ago)		3	9	6	7	12
Adj. owing to differences in date of sale		1.50%	4.50%	3.00%	3.50%	6.00%
Sale price / SFT		220.00	150.00	130.00	109.00	104.00
Adj. Sale Price / SFT		151.80	153.00	146.90	148.24	146.64
Avg Price / SFT		149.32				
Estimated Value of Subject Property		22,39,740.00				

The following indicates how the adjustments were made to the comparables to reflect the characteristics of the subject property. The adjustments to Comparable 1 are discussed to help clarify the process.

1. Depreciated at 2.5 percent per annum. Because the subject property is nine years older, a depreciation adjustment of -22.5% ($= 9 \times 2.5\%$) reduces the value of Comparable 1.
2. Condition adjustment after average depreciation is taken into account: Good, none; Average, 10%; Poor, 20%. Because Comparable 1 is in good condition and the subject property is in only average condition, a condition adjustment of -10% percent reduces the value of Comparable 1.
3. Location adjustment: Prime, none; Secondary, 20%. Comparable 1 and the subject property are both in prime locations, so no location adjustment is made.
4. Market has been rising by 0.5 percent per month. Thus, an adjustment of 1.5 percent is made to the sale price of Comparable 1 because the sale occurred three months ago.

Advantages & Disadvantages of Cost and Sales Comparison Approaches

The cost approach to valuation is sometimes said to set an upper limit on the value. It is assumed that an investor would never pay more than the cost to buy land and develop a comparable building. This assumption may be somewhat of an overstatement because it can take time and effort to develop another building and find tenants. Furthermore, there may not be the demand for another building of the same type in the market. That said, one would question a value that is much higher than implied by the cost approach. The main disadvantage of the cost approach is that it can be difficult to estimate the depreciation for a property that is older and/or has much obsolescence. So, the cost approach will be most reliable for newer properties that have a relatively modern design in a stable market.

The sales comparison approach relies on a reasonable number of comparable sales to be able to gauge what investors are expected to be willing to pay for the subject property. When the market is active, the sales comparison approach can be quite reliable. But when the market is weak, there tends to be fewer transactions, which makes it difficult to find comparable properties at a location reasonably close to the subject property. Even in an active market, there may be limited comparable sales for some properties, such as regional malls or special purpose properties.

Finally, the sales comparison approach assumes the investors who are buying properties are behaving rationally. That is, it assumes that the prices paid by investors in the current market are representative of market values. However, the investment value to a particular investor may result in that investor being willing to pay a price in excess of market value. Also, there are times when investors in general are overly exuberant and there is a “bubble” in prices being paid for properties. This raises the question of whether these prices still represent “market value” because it seems likely that prices will eventually fall back to a more normal level. It is often argued that the appraiser’s job is to measure what investors are willing to pay whether they think it is rational or not because market value is a most probable selling price.

Accounting Treatment of Assets under IFRS

The table below highlights some key points for attention.

Class	Classification	Applicable IFRS'	Principles under IFRS	Requirements for application of FV principles
Tangible Assets (Property, Plant & Machinery, Equipment)	Used in Business Operations over multiple periods, not primary for disposal	IAS 16, IAS 36, IFRS 13	Cost less Accumulated Depreciation adjusted for any impairments identified OR Fair Value	Qualified documented appraisals; Regular review with periodic FULL valuation (not exceeding 5 years) and Interim valuation (not exceeding 3 years)

Key Features of IAS 16 – Property, Plant & Equipment

The objective of IAS 16 is to prescribe the accounting treatment for property, plant, and equipment.

The principal ingredients of this Ind AS are:

- ✓ the recognition of assets,
- ✓ the determination of their carrying amounts,
- ✓ the depreciation charges and
- ✓ impairment losses to be recognised

Recognition (16.7)

Items of property, plant, and equipment should be recognised as assets when it is probable that:

- 1) it is probable that the future economic benefits associated with the asset will flow to the entity, and
- 2) the cost of the asset can be measured reliably

This recognition principle is applied to all property, plant, and equipment costs, at the time they are incurred. These costs include costs incurred initially to acquire or construct an item of property, plant and equipment and costs incurred subsequently to add to, replace part of, or service it.

If the cost model is used, each part of an item of property, plant, and equipment with a cost that is significant in relation to the total cost of the item must be depreciated separately. [16.43]

IAS 16 recognises that parts of some items of property, plant, and equipment may require replacement at regular intervals. The carrying amount of an item of property, plant, and equipment will include the cost of replacing the part of such an item when that cost is incurred if the recognition criteria (future benefits and measurement reliability) are met. The carrying amount of those parts that are replaced is derecognised in accordance with the derecognition provisions of IAS 16. [16.13]

Also, continued operation of an item of property, plant, and equipment (for example, an aircraft) may require regular major inspections for faults regardless of whether parts of the item are replaced. When each major inspection is performed, its cost is recognised in the carrying amount of the item of property, plant, and equipment as a replacement if the recognition criteria are satisfied. If necessary, the estimated cost of a future similar inspection may be used as an indication of what the cost of the existing inspection component was when the item was acquired or constructed. [16.14]

Initial measurement

An item of property, plant and equipment should initially be recorded at cost. [IAS 16.15] *Cost includes all costs necessary to bring the asset to working condition for its intended use.* This would include not only its original purchase price but also costs of site preparation, delivery and handling, installation, related professional fees for architects and engineers, and the estimated cost of dismantling and removing the asset and restoring the site. [IAS 16.16-17]

If payment for an item of property, plant, and equipment is deferred, interest at a market rate must be recognised or imputed. [IAS 16.23]

If an asset is acquired in exchange for another asset (whether similar or dissimilar in nature), the cost will be measured at the fair value unless (a) the exchange transaction lacks commercial substance or (b) the fair value of neither the asset received nor the asset given up is reliably measurable. If the acquired item is not measured at fair value, its cost is measured at the carrying amount of the asset given up. [IAS 16.24]

Measurements subsequent to Initial Recognition

IAS 16 permits two accounting models:

- o Cost Model: The asset is carried at cost less accumulated depreciation and impairment. [IAS 16.30] and
- o Revaluation Model: The asset is carried at a revalued amount, being its fair value at the date of revaluation less subsequent depreciation and impairment, provided that fair value can be measured reliably. [IAS 16.31]

Under the revaluation model, revaluations should be carried out regularly, so that the carrying amount of an asset does not differ materially from its fair value at the balance sheet date. [IAS 16.31]. If an item is revalued, the entire class of assets to which that asset belongs should be revalued. [IAS 16.36].

Revalued assets are depreciated in the same way as under the cost model.

If a revaluation results in an increase in value, it should be credited to other comprehensive income and accumulated in equity under the heading "revaluation surplus" unless it represents the reversal of a revaluation decrease of the same asset previously recognised as an expense, in which case it should be recognised as income. [IAS 16.39]

A decrease arising as a result of a revaluation should be recognised as an expense to the extent that it exceeds any amount previously credited to the revaluation surplus relating to the same asset. [IAS 16.40]

When a revalued asset is disposed of, any revaluation surplus may be transferred directly to retained earnings, or it may be left in equity under the heading revaluation surplus. The transfer to retained earnings should not be made through the income statement. [IAS 16.41]. The idea of transferring the revaluation surplus to the retained earnings post the disposal of a revalued asset is that, now these reserves become free and available for distribution.

Impairment Testing

IAS 36 requires impairment testing and, if necessary, de-recognition for property, plant, and equipment. An item of property, plant, or equipment shall not be carried at more than recoverable amount. Recoverable amount is the higher of an asset's fair value less costs to sell and its value in use. The value in use, simply put is the present value of expected future benefits that are expected to be derived from the use of the tangible asset.

Any claim for compensation from third parties for impairment is included in profit or loss when the claim becomes receivable. [IAS 16.65]

An asset should be removed from the balance sheet on disposal or when it is withdrawn from use and no future economic benefits are expected from its disposal. The gain or loss on disposal is the difference between the proceeds and the carrying amount and should be recognised in the income statement. [IAS 16.67-71]

If an entity rents some assets and then ceases to rent them, the assets should be transferred to inventories at their carrying amounts as they become held for sale in the ordinary course of business. [IAS 16.68A]

Valuation or Re-valuation disclosures

If property, plant, and equipment is stated at revalued amounts, *certain additional disclosures* are required: [IAS 16.77], these are:

- 1) the effective date of the revaluation
- 2) whether an independent valuer was involved
- 3) the methods and significant assumptions used in estimating fair values
- 4) the extent to which fair values were determined directly by reference to observable prices in an active market or recent market transactions on arm's length terms or were estimated using other valuation techniques
- 5) for each revalued class of property, the carrying amount that would have been recognised had the assets been carried under the cost model
- 6) the revaluation surplus, including changes during the period and any restrictions on the distribution of the balance to shareholders

Importance of Valuation of Tangible Assets by reference to IAS 16

If you observe closely the provisions and clauses of IAS 16, you will observe the importance of the following activities:

- a) Regular and periodic assessment of carrying values of the asset
- b) Regular and periodic assessment of Fair Value and Value in Use of the Asset (Recoverable Value of Asset)
- c) Regular and periodic revaluations using Independent Valuers
- d) Periodic mandated Impairment Testing based on Valuers' reports

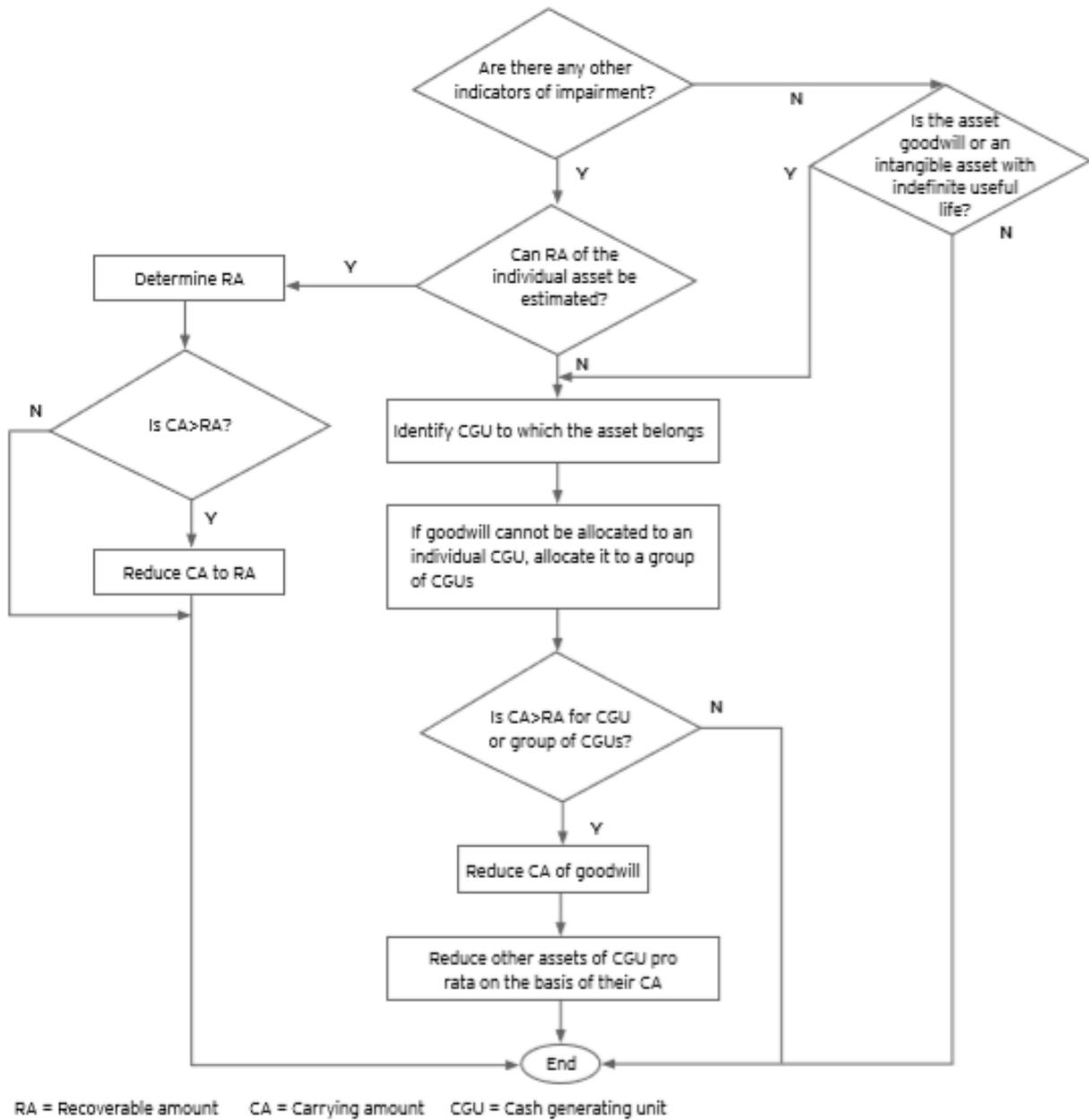
Each of the above recommended procedures will call upon the necessity of valuing the tangible assets. In this context, the procedures, methods and approaches for valuation will come in handy, needless to state, creating opportunities for valuation professionals, those who are specialising in this niche subject, valuation, which is slowly gaining utmost importance in this fraternity of professionals.

Key Features of IAS 36 – Impairment of Assets

IAS 36 deals with impairment testing for all tangible and intangible assets, except for assets that are covered by other IFRS. IAS 36 requires that assets be carried at no more than their recoverable amount. To meet this objective, the *standard requires entities to test all assets that are within its scope for potential impairment* when indicators of impairment exist or, at least, annually for goodwill and intangible assets with indefinite useful lives.

Let us have a close look at the flowchart below which indicates

- o The process for going about impairment testing
- o The steps to be taken if the assets are found to be impaired



A **cash-generating unit** is the smallest group of assets that independently generates **cash** flow and whose **cash** flow is largely independent of the **cash** flows generated by other assets. The concept is used by the international financial reporting standards in the determination of asset impairment.

Indicators for Impairment

The standard requires an entity to assess, at each reporting date, whether there are any indicators that assets may be impaired. An entity is required to consider information from both external sources (such as market interest rates, significant adverse changes in the technological, market, economic or legal environment in which the entity operates, market capitalisation being lower than net assets) and internal sources (such as internal restructurings, evidence of obsolescence or physical damage to the asset). Notwithstanding whether indicators exist, recoverability of goodwill and intangible assets with indefinite useful lives or those not yet in use are required to be tested at least annually.

Recoverable Value

The recoverable amount of an asset is the *greater of its 'fair value less costs to sell' and its 'value in use'*. To measure impairment, the asset's carrying amount is compared with its recoverable amount.

The recoverable amount is determined for individual assets. However, if an asset does not generate cash inflows that are largely independent of those from other assets, the recoverable amount is determined for the CGU to which the asset belongs. A CGU, as explained above, is the smallest identifiable group of assets that generate cash inflows that are largely independent of the cash inflows from other assets or groups of assets.

Value in Use

Value in use (VIU) is the present value of the future cash flows expected to be derived from an asset or a CGU.

A VIU calculation includes:

- ✓ Cash flow projections;
- ✓ An estimate of the future cash flows that the entity expects to derive from the asset;
- ✓ Expectations about possible variations in the amount or timing of those future cash flows;
- ✓ An appropriate discount rate that reflects current market assessments of the time value of money and risks specific to the asset for which the future cash flow estimates have not been adjusted
- ✓ The price for bearing the uncertainty inherent in the asset which can be reflected in either the cash flow estimates or the discount rate

When measuring VIU, the entity's cash flow projections

- a) Must be based on reasonable and supportable assumptions that represent management's best estimate of the set of economic conditions that will exist over the remaining useful life of the asset;
- b) Must be based on the most recent financial budgets/forecasts approved by management — without including cash inflows or outflows from future restructurings to which the entity is not yet committed;
- c) Should exclude borrowing costs, income tax receipts or payments and capital expenditures that improve or enhance the asset's performance, based upon the principle of conservatism;
- d) Should include overheads that are directly attributed or can be allocated on a reasonable and consistent basis and the amount of transaction costs if disposal is expected at the end of the asset's useful life;
- e) For periods beyond the periods covered by the most recent budgets/forecasts should be based on extrapolations using a steady or declining growth rate unless an increasing rate can be justified. IAS 36 requires that entities compare their previous estimates of cash flows to actual cash flows as part of the assessment of the reasonableness of their assumptions, particularly where there is a history of management consistently overstating or understating cash flow forecasts. The results of past variances should be factored into the most recent budgets/forecasts. However, to the extent this has not occurred, management should make the necessary adjustments to the cash flow projections.

IAS 36 requires that VIU should reflect the present value of the expected future cash flows, that is, the weighted average of all possible outcomes.

In practice, present values are computed either by a 'traditional' or 'expected' cash flow approach.

In theory, the outcome of the impairment test should be the same regardless of which approach is used.

Under a traditional approach, a single set of estimated cash flows and a single discount rate, often described as 'the rate commensurate with the risk,' are used. The expected cash flow approach applies different probabilities

to expected cash flows rather than using a single most likely cash flow. When comparable assets can be observed in the market place, the traditional approach is relatively easy to apply. However, as indicated in IAS 36, the expected cash flow approach is, in some situations, a more effective measurement tool than the traditional approach.

Regardless of which approach is selected, both cash flows and the discount rate should be expressed consistently, either in real terms, which exclude inflation, or in nominal terms. IAS 36 requires the use of pre-tax cash flows and pre-tax discount rates in the impairment test. In practice, primarily because of the widespread use of the Capital Asset Pricing Model — post-tax costs of equity are generally determined and used in the entity's computations of the discount rate. Discounting post-tax cash flows at a post-tax discount rate and discounting pre-tax cash flows at a pre-tax discount rate should give the same result when there are neither temporary differences nor available tax losses at the measurement date.

Let us look at the process of arriving at the Value in Use, below:

Now, assume that *carrying amount (CA) of the CGU is INR 12,000 (Millions)*. The VIA is estimated to be INR 10,500 (Millions). Now, assume the FVLCS (Fair Value less Costs to Sell) is ascertained at INR 9000 (Millions), *the RA being the higher of the FVLCS and VIU, that is INR 10,500 (Millions)*.

Hence, as the CA is > RA, an Impairment Loss of INR 1500 (Millions) is recognised in the Financial Statements for the CGU.

Fair Value less Costs to Sell

Fair value less costs to sell (FVLCS) is the amount obtainable from the sale of the asset in an arm's length transaction between knowledgeable and willing parties, less the costs of disposal.

This term is consistent with the measurement basis in IFRS 5 on Non-current Assets Held for Sale and Discontinued Operations.

IAS 36 establishes a hierarchy for determining an asset's FVLCS as follows:

- o The best evidence of the asset's FVLCS is a price in a binding sale agreement in an arm's length transaction, adjusted for incremental costs that would be directly attributable to the disposal of the asset
- o If there is no binding sale agreement, but the asset is traded in an active market, FVLCS is the asset's market price less the costs of disposal
- o If there is no binding sale agreement or active market for the asset, FVLCS is based on the best information available to reflect the amount that the entity could obtain at the end of the reporting period from the disposal of the asset in an arm's length transaction after deducting the costs of disposal
- o If a market price is not available, FVLCS can be determined using a discounted cash flow (DCF) approach.

The following valuation principles will apply when determining FVLCS:

- ✓ The calculation of FVLCS should reflect all future events that would affect the expected cash flows for a typical market participant that holds the asset
- ✓ Fair value should reflect information that is available without undue cost or effort about the market's assessment of the future cash flows
- ✓ Market-based assumptions should be based on current market data unless reliable evidence indicates current experience will not continue
- ✓ If there is contrary data indicating that market participants would not use the same assumptions as the entity, the entity should adjust its assumptions to incorporate the market information

- ✓ FVLCS also includes the amount of transaction costs that would be incurred at the reporting date in disposing of the asset and those should be reduced from the ascertained FV

Disclosures

IAS 36 requires extensive disclosures in respect of the impairment tests performed and impairments so recognised in the financial statements.

The disclosures are even more extensive for goodwill than for the impairment of other assets. The key disclosure requirements are the following:

- a) The amounts of impairments recognised and reversed and the events and circumstances that were the cause thereof
- b) The amount of goodwill per CGU or group of CGUs
- c) The valuation method applied: FVLCS or VIU and its approach in determining the appropriate assumptions
- d) The key assumptions applied in the valuation, including the growth and discount rate used
- e) A sensitivity analysis, when a reasonably possible change in a key assumption would result in an impairment, including quantification of the amount by which the assumption would need to change to result in an impairment

Importance of Valuation of Tangible Assets by reference to IAS 36

If you observe closely the provisions and clauses of IAS 36, here too you will observe the importance of the following activities:

- i. Regular and periodic assessment of carrying values of the asset
- ii. Regular and periodic assessment of Fair Value and Value in Use of the Asset (Recoverable Value of Asset)
- iii. Regular and periodic revaluations using Independent Valuers
- iv. Periodic mandated Impairment Testing based on Valuers' reports

Valuation of Plant & Machinery

One approach to value the Plant & Machinery is the "Direct Cost Approach". All costs that have been incurred to bring the asset to their current location and condition are included in the value of the Plant & Machinery, being the subject of valuation. An example is as under:

The task is to estimate the cost of the subject conveyor given the following :

Conveyor Components

- The conveyor is 21'6" long center-to-center, 24" wide.
- 6" formed 308 stainless steel frame is required at each side of the conveyor.
- 2" diameter by 24" long plastic rollers 12.5" on center.
- Roller bed: 2" diameter x 24" long plastic roller return idlers 48" on center
- 10" diameter by 24" long rubber lagged head drum (one required)
- 6" diameter x 24" galvanized tail drum (one required)

- 24" wide 6-ply sanitary rubber belting
- 8" diameter sprocket with set collar (one required)
- 4" diameter sprocket with set collar (one required)
- 1" roller chain drive (one 36" long required)
- Angle gear motor drive, 1 horsepower, 48 RPM (revolutions per minute)
- 220/440-volt alternating current (one required)
- Six pair 2" square pipe galvanized saddle legs, 30" high
- Wiring Components
- One flexible connection
- 12 linear feet 1/2" conduit with 3 strands 14-gauge wire
- Safety switch, 30 amp, 240 volt (one required)

Other Costs

Labor : The time to fabricate the conveyor at the manufacturer's plant is 2 men for 8 hours each.

Engineering : The time to engineer and design the conveyor is 1 man for 16 hours.

Overhead and profit : All of the manufacturer's overhead and profit is included in the unit costs set out herein.

Costs

- 6" Formed 308 stainless steel frame, \$15.40 per linear foot
- 2" diameter x 24" long rollers, \$24.15 each 24" Wide 6-ply sanitary rubber belting, \$6.95 per linear foot
- 8" sprocket with set collar, \$15.35 each
- 4" sprocket with set collar, \$9.55 each
- 10" diameter x 24" rubber lagged head drum with pillow blocks and bearings, \$69.30 each
- 6" diameter galvanized tail drum assembly complete, \$26.75 each
- 1" roller chain, \$2.63 per linear foot
- Motor, 1 horsepower, 48 RPM, \$765.50 each
- 1 pair 2" square pipe saddle legs, adjustable height, \$15.40 each
- 1 flexible connection, \$22.39
- 1/2" conduit and wire, 3 strands 14-gauge wire, \$5.17 per linear foot
- 30-amp, 240-volt safety switch, \$ 197.65 each
- Labor for fabrication (Including all payroll burdens), \$33.68 per hour
- Engineering (including all payroll burdens), \$38.35 per hour
- Given the information above, this is how the asset would be valued.

Given the information above, this is how the asset would be valued.

Description	Unit Pricing	Cost
Stainless Steel Frame	43' @ \$15.40 LF (2 sides x 2'-6" = 43')	\$662.20
Plastic Rollers	20 @ \$24.15 Each (21'-6" minus 5" head and 3" tail = 20'-10" ÷ 12.5" center-to-center = 20)	\$483.00
Return Rollers	5 @ \$24.15 Each (21'-6" minus 5" head and 3" tail = 20'-10" ÷ 50" center-to-center = 5)	\$120.75
Belting	45' @ \$6.95 LF (see calculations in footnote)*	\$312.75
Head Drum	1 @ \$69.30 Each	\$69.30
Tail Drum	1 @ \$26.75 Each	\$26.75
8" Diameter Sprocket with Set Collar	1 @ \$15.35 Each	\$15.35
4" Diameter Sprocket with Set Collar	1 @ \$9.55	\$9.55
1" Roller Chain	3' @ \$2.63 LF	\$7.89
Gear Motor	1 @ \$765.50 Each	\$765.50
6 Pair Legs	6 pair @ \$15.40 Each	\$92.40
1 Flexible Connection	1 @ \$22.39	\$22.39
½" Conduit and Wire	12' @ \$ 5.17 LF	\$62.04
Safety Switch	1 @ \$197.65 Each	\$197.65
Labor	2 men at 8 hrs. = 16 Hrs. @ \$33.68 Per Hour	\$538.88
Total Direct Cost		\$3,386.40
Engineering	16 Hrs. @ \$38.35 Per Hour	\$613.60
Total Cost or Total Reproduction or Replacement Cost New		\$4,000.00

(At the conveyor manufacturer's plant. Freight and handling to a user is not included).

Now, let's look at how the "sales comparison approach" tackles the difficult task of valuing a plant. The below example would be of great importance given the challenges around data dependencies.

An active market may or may not exist. A single isolated sale of a similar plant may not be representative of the value of the subject plant or the price it would bring if offered for sale in the market. One transaction, the economic decision of one market participant, can represent an abnormality that may not reflect the market. An analysis of only one similar property sale can be likened to a very "thin" market, in terms of securities, with very few trades being made. The market concept refers to the fact that the comparable sales used in the sales comparison approach should reflect arm's-length transactions between willing buyers and sellers, not transactions in which compulsion on the part of either party similar to the subject in physical attributes, such as capacity and design, and have similar income levels and patterns. For the market in which sale took place to be considered comparable, it must show the same demand for that type of property or the product it produces. The comparables must be similar enough to allow for legitimate and meaningful adjustments. If the differences between the subject and the comparables are too extreme and are not properly reflected in the adjustment grid, the sales comparison approach will not be meaningful.

The strengths of the sales comparison approach, as it applies to process plants, include the fact that it represents the best evidence when strong comparable transactions- those that are not only similar to the

subject but also easily explained and understood are available. The weakness of this approach lies in the difficulty often experienced in finding appropriate comparable sales and discovering the motives of buyers and sellers. In general, this approach is less appropriate for certain transactions because of the number and magnitude of adjustments that must be made to any suggested comparable transaction in order to determine market value on a comparable basis for valuation purposes, as opposed to the investment value or value to a particular owner evidenced in the purchase price. For example, adjustments may be necessary to extract the value of a single plant from a multiple-plant transaction, to adjust for different financing conditions, to extract the value of intangible elements included in the sale, or to account for the presence or absence of contracts and agreements, as well as for dissimilar raw material sources and physical condition.

Table 6.4 contains an adjustment grid for the hypothetical process plant in this example. Adjustments are shown for capacity, processing slate of products, effective age, time, and location.

	Subject	Sale 1	Sale 2	Sale 3
Transaction Price	N/A	\$1,920,000	\$870,000,000	\$6,060,000,000
Capacity Adjustment	200,000	200,000 1.000	100,000 2.000	400,000 0.500
Slate-of-Products Adjustment ²	10	8 1.250	10 1.000	12 0.833
Effective Age Adjustment	25 years	20 years 0.857	25 years 1.000	20 years 0.857
Time Adjustment	Appraisal date	Concurrent 1.000	1 year prior 1.050	3 years prior 1.150
Location Adjustment	Houston, Texas	U.S. Gulf Coast 1.000	U.S. East Coast 1.100	U.S. West Coast 0.800
Composite Adjustment		1.071	2.310	0.328
Adjusted Price		\$2,056,320,000	\$2,009,700,000	\$1,987,680,000
Rounded to nearest \$10,000,000		\$2,060,000,000	\$2,010,000,000	\$1,990,000,000

Valuation of Vehicles

Given below is the technique of valuing a vehicle using the valuation factors (weights method).

- The principles work on seven weighted headings with total weight of 50 units.
- Each heading is graded into 1 to 10. The best situation is graded 10 units, while the worst situation is graded 1 unit.
- The product of the weigh and the grade obtained is then summed up and divided by 500 being the product of the weigh and the best grade for each heading.
- The result of the above is the valuation factor which is a fraction of a unit.
- The product of the valuation factor and current market price give the value of the motor vehicle.

Given below is the table of weights.

S.No.	Description	Weight
1	Condition of engine and transmission train	25
2	Age/length of usage	7
3	Mileage/Extent of use	5
4	The condition of the body	5

5	Functionality of facilities in the vehicle	5
6	Maintenance history	2
7	Condition of tires	1
	Total	50

Now let's look at how a vehicle is valued by the above-mentioned approach.

We are valuing a Toyota Corolla, 1.8 GL Vehicle, 2006 model, having a mileage of 75000 kms. And having a market price of INR 35,00,000

S.No.	Description	Weight(W)	Grade (G)	WXG
1.	Age of vehicle	7.0	6.5	45.5
2.	Mileage of vehicle	5.0	7.0	35.0
3.	Engine/transmission train cond.	25.0	7.0	175.0
4.	Body condition	5.0	7.5	37.5
5.	Facilities conditions	5.0	7.0	35.0
6.	Maintenance history	2.0	7.0	14.0
7.	Tire condition	1.0	6.0	6.0
		50.0		348.0

$$\text{Valuation Factor; Vf} = \frac{W \times G}{500} = \frac{348}{500} = 0.696$$

– Value = Vf x Current market price

– Value = 0.696 x 3,500,000.00 = #2,436,000.00

Valuation of Ships & Barges

Ship valuations (or appraisals, as they are also known) are typically issued by shipbroking firms with extensive experience of the ship sale and purchase markets. They usually take one of two forms, a simple letter of a few lines, or a more detailed certificate including more particulars of the vessel and the valuer's disclaimers. There is little difference in law in the validity of the two formats: both are understood to be professional expressions of opinion.

A detailed exposition of underlying assumptions, however, can better protect the interests of both the valuer and any party relying upon the valuation, as will be discussed in further detail below.

Occasionally brokers are asked to put in writing a quick opinion of value, for example by email. Prudent disclaimers are not always included, and care should be taken to distinguish these 'off the cuff' initial estimates from formal valuations.

Reasons for Valuations

There are several common reasons for valuations being required, including:

- Security for a proposed mortgage: banks will require independent appraisals of value to accompany a loan application

- Security for an existing mortgage: banks need to keep abreast of the underlying value of their security
- Reserve price for a court sale: courts require an indication of what a vessel will achieve at auction in order to advise creditors
- Insurance or general average
- Investment prospectus: stock market flotations will require valuation of assets; recently a number of owners have raised finance by issuing 'junk bonds' in the USA.
- Annual accounts/audit: companies need to report to shareholders on asset values
- Accounting for vessels which are under shared or family ownership
- Legal disputes: the values of vessels are regularly germane across a range of legal cases
- Government regulations

It can be appreciated that the perspective and expectations of parties commissioning valuations under the above headings can vary greatly: the insured value, for example, would not be expected to be the same as the value achievable at a forced sale. Independence and objectivity may be an absolute requirement in some circumstances, and will be discussed in greater detail below, but should not be taken for granted.

Different perspectives, and different subjective values, might be put on the same vessel by:

- A serious seller, who will want to maximise its value
- A serious buyer, who will want to buy as cheaply as possible
- A prospective lender, who will want adequate security over the term of a loan
- A prospective investor, who will want an adequate return and may or may not be willing to speculate
- A current lender/mortgagee, who is already committed to the vessel
- A current investor/owner, who is likewise already committed to the vessel
- Assessors of replacement value
- Courts administering a forced sale, e.g. by auction

Parties commissioning valuations should be aware of these differing perspectives, and that unless given other specific instructions, the valuer will be seeking to find an objective middle line between the perspectives of willing buyers and willing sellers, in much the same way that, as broker, he will try to bring about sale and purchase transactions.

At times valuers are criticised by those with particular perspectives for distorting the market: banks, for example, may not be pleased in a weak market to be told that they are running portfolios with 'negative equity', and that the value of their security does not cover their outstanding loans: they point out that low valuations can trigger a downward spiral of foreclosures. However, the decision as to whether to continue to run loans should rest with the banks themselves, on a case by case basis. Shooting the messenger (the valuer in this case) is hardly reasonable, especially when there is an equally loud clamour for absolute objectivity.

Market Characteristics

The difference between values of ships and those, for example, of paintings, is that whereas the art market rests entirely on sentiment (a mixture of aesthetic appreciation and gambling, in which the gamblers elbow out the aesthetes as values rise), the shipping market is founded on commercial pragmatism. However, one of the pitfalls ready to trap the inexperienced is the dichotomy between ships as commodities and ships as machinery.

At its simplest, a ship is just a piece of machinery which can be hired out; it has a very finite life. In the smallest niche trades (for example a ferry service with purpose-built vessel) a ship's value is dictated by what it is projected to be able to earn. Most banks would like to be able to treat all vessels in the same way and require prospective borrowers to 'justify' intended purchases with predictions of future earnings.

However, almost all shipping is exposed to international economic forces: demand can at sometimes drive up the rates of hire, and over-supply can drive rates and prices down. It is at this point that the sentiment factor does play a part: not the aesthetic variety (it is not unknown for owners to hold on to vessels named after family members, but rarely do they buy them for sentimental reasons).

Many shipowners consider that the real money in shipping is to be made not from operating but from buying and selling at the right time. This philosophy influences especially heavily the price movements of conventional bulk carriers and tankers, where vessels change hands in sufficient numbers to give the market liquidity.

Expectation is invariably optimistic even in an apparently hopelessly depressed market, and a ship is always worth more than it can be demonstrated to be able to earn.

Fees

Until recently, valuations were under-priced, for reasons explored further below. The shipping industry is now moving towards a wider acceptance of a price structure which more accurately reflects the expertise and responsibilities involved.

Method

The most notable difference between ship valuations and, for example, real estate valuations, is that in almost all cases the ship valuer does not inspect the ship. It is seldom, indeed, that he even sees a recent surveyor's report. If instructed to do so, the valuer will be able to arrange for the vessel to be surveyed, and the resultant report can greatly enhance the accuracy of a valuation, bringing to light information which would not otherwise be available to the valuer. *Unless stated otherwise, however, it is the custom of the trade that valuation certificates are issued on the assumption that vessels are in good working order and free of charter.* The actual condition of the vessel is usually ignored unless specific instructions are given to the valuer that they should be taken into account, and attention drawn to particular circumstances (which may be either defects, e.g. unrepaired damage, or enhancements, e.g. having undergone a formal Life Extension certified by a classification society).

Most valuers, hence, include wording in their certificates along the following lines:

“assuming the vessel to be in good working order and in the sound seagoing condition in hull and machinery which is to be expected of a vessel of its age, size and type, undamaged, fully equipped, with class fully maintained and with valid certificates, free from all conditions, charter free”

Although they take account of when the next special survey and/or drydocking is due, which affects how long the vessel can be traded internationally before the cost of passing surveys is next incurred, valuers do not inspect classification society records nor do they usually have access to reports on such records.

How then do valuers know what they are assessing if they do not see the vessel itself? *They work on the paper description of the vessel, which they prefer to receive in detail from the party commissioning the valuation, who then have the opportunity to supply particular information on condition etc, which would not be available from routine sources.* If a detailed description is not available, the valuer will gather as much as he is able from reference books and from his own database (which may supply useful additional detail particularly if the vessel has been marketed for sale in the past). He may at this stage ask the party commissioning the valuation to obtain particular information which is not openly available, e.g. on the classification survey status of the vessel.

If significant detail is still missing he might make a reasoned assumption (for example on the lightweight of an older ship of which the value for demolition is an important factor) and note the fact in the certificate.

Willing Buyer, Willing Seller

It is another well-established custom that valuations should reflect the price at which a deal would be struck were a sale to take place between a 'willing buyer and a willing seller'. It will reflect the gross price, as payable by the buyer, before deductions for commissions, if any, and other delivery costs payable by the seller.

Armed, therefore, with a description of the vessel, the valuer will begin to make comparisons with the sales of similar ships which have been reported sold. The ideal would be that the valuer should have had personal experience of a sale on the open market of an exact sister vessel that very day. Although such a happy coincidence would be extraordinary, the volume of sales of conventional types such as bulk carriers and tankers makes it usually possible to find a number of fairly similar vessels which have been recently reported sold: these and the valuer's market experience and knowledge will swiftly establish an approximate range within which a more precise appraisal can then be undertaken.

Quantitative Factors

At this point the valuer will compare the 'quantitative' attributes of the similar vessels which have been sold with those of the vessel to be valued. 'Quantitative' attributes are mainly embodied in the outline specification of a vessel, including the tonnage, dimensions, speed, cargo gear or pumping capacities, and compliance with current legislation (e.g. in respect of double hull tankers) but also encompass the age of the vessel and when the next special survey is due. These are all factors upon which direct quantitative comparisons with other vessels can be made, and adjustments made on an almost mathematical basis: a larger vessel is usually worth more than a smaller one, a younger vessel more than an older.

Formulaic comparisons are more useful when it comes to considering age. After making assumptions about the likely life of a vessel (perhaps 20-25 years), and its residual scrap value, it is possible to estimate by how much the value should be depreciated for each extra year of age. In practice this will be about 6% of a younger vessel's total value, increasing significantly as it gets older and as the proportion of the value which is in excess of the scrap value diminishes.

Qualitative Factors

Having exhausted the mathematical approach, the valuer will have refined his comparisons up to a point. He will not yet, however, have taken into account the reputation of the shipbuilder, the type of the main engine, the flag of the vessel and its classification society. All these can have significant effects on values.

The variables here are almost infinite, and the valuer's experience must be given full rein. Drawing on his knowledge of owners' current preferences, he will be able to assess the relative merits of similar vessels built in neighbouring countries or operated by different owners. He will know the trades in which various types of vessel are likely to have been engaged, and their potential effects on the condition and life expectancy of the vessel. And most importantly, he will know from experience by how much each of these variables has affected values in the past and can be expected to do so now.

The valuer will be bringing all this experience to bear not only on the vessel that he is valuing, but also on the reported sales with which he is making comparisons. He will have noted particular circumstances surrounding sales as they are reported and recorded in his database for example if and for what reason a price achieved might not be fully representative of the market.

At this point, the valuer will be ready to give an accurate valuation of the vessel according to the usual assumptions, set out above, that the vessel is charter free and in sound condition for its age and type.

Specific Factors

It is up to the party commissioning the valuation to raise matters to which the valuer would not otherwise be privy, for example the condition of the vessel, its trading history or its current employment. They should bear in mind that the actual condition of a vessel can have a very substantial effect on its value, and that, of two vessels of the same age and description, one can have several years' profitable trading life ahead of it while the other is ready to be scrapped.

If the valuer's attention is drawn to specific damage to the vessel he will ask for details and the cost of these repairs and take account of them in his valuation: if they are not available he may offer an assumption and make a note to that effect in the certificate. Not that he simply reduces the value by the cost of repairs: the vessel may be able to continue to trade, albeit for a limited period or with restricted range, and the valuer will assess the impact of the damage on the undamaged value. To take another analogy from the motor trade, a roadworthy car with a dented body panel is worth less than a car which is unmarked: but, particularly in the case of an older vehicle, the cost of repairing the dent may be substantially more than the diminution in value arising from it.

Another significant change in the value of a vessel can occur if it is committed for a long period of charter. If the period is longer than about 6 months, depending on whether the charter rate is higher or lower than what might be obtainable if the same employment were fixed on the date of the valuation, such employment can enhance or detract from a vessel's value. When asked to do so a valuer will take a charter rate and period into account and should make a note accordingly in the certificate. The usual method is to discount the amount by which the rate differs from what is obtainable on the market at the date of valuation and adjust the charter free valuation by the discounted amount. The valuer will not, however, assess the other terms of the charter party, nor the reliability of the charterer.

Earnings

We have already shown, above, that ships tend to be worth more than they can be demonstrated to be able to earn. In niche markets, however, where there is little turnover in the sale of vessels, earning potential can be a useful measure to the valuer. If he can work his way back to a sale of a comparable vessel at some point in the past, observe what the vessel was earning then and what the same vessel would earn now, he can thus arrive at a value. Or he can calculate as a bank will calculate, discounting the projected operating surplus over the remaining life of the vessel, and its projected residual value. In both these last two cases, however, the valuer will still fine tune his final opinion with a close evaluation of market sentiment.

Demolition and Newbuilding

Demolition prices are useful pointers to a vessel's ultimate residual value, and the valuer especially of older vessels will be aware of their lightweight and of prices being offered for ships by demolition yards in various parts of the world. The demolition value net of the cost of delivering the vessel to the demolition yard is, in all but the most unusual circumstances, the lowest possible value of a vessel at any time and is a datum upon which a valuer can build his analysis of further trading potential and market sentiment.

Similarly, newbuilding prices will guide the valuer of modern tonnage in respect of replacement cost. This is not to say, however, that the contract price of a vessel dictates its second-hand value the day after it is delivered. Such vessels are as exposed to the markets as older vessels. Although it is already a quarter of a century since the heady days of the tanker boom, when newbuilding contracts were being resold at substantial premiums, values can still go up as well as down. These principles apply equally to the appraisal of newbuilding contracts themselves.

Fleet Valuations

It is common for valuers to be asked to consider fleets of vessels under the same ownership. Unless otherwise directed they will value each vessel individually, in the manner already described. If the values are totalled,

however, to arrive at an overall 'Fleet Valuation', the prudent valuer should add a note to the effect that this does not necessarily reflect the value of the fleet if it were all to come on the market at the same time.

Art or Science

It can be seen from the above that ship valuation is firmly rooted in scientific analysis of the shipping markets. However, although a portrait, too, can be painted by numbers, it takes human art and inspiration to make it satisfactorily convincing. So, it is with ships: mechanistic deduction on its own will not reflect the shades of value which overall market sentiment and the characteristics of specific ships engender: a good valuer will harness his feeling for market sentiment to sales and other more or less comparable guides and formulate an opinion which is professional, well-informed, and as accurate and possible with the number of variables involved.

Guidelines for Banks

Lenders, in particular, have stood too far back from the valuation process, and allowed borrowers to supply certificates from their own (presumably friendly) contacts in the industry. In recent years a number of legal cases have been taken out against valuers by banks who had 'relied upon' the valuations which they had been handed, and subsequently found them to be erroneous. Naturally enough they argued that the firms issuing the certificates owed them a duty of care, and that they had been negligent in not ensuring their accuracy.

Valuers' insurers, however, have often been able to show that the banks themselves have been less than diligent in their enquiries, and that in effect they should have known better than to have the wool pulled over their eyes. The effects of conflicts of interest can be minimised if third parties enquire more closely into the relationship between owner and valuer and satisfy themselves that certificates have been supplied on a professional arm's length basis, with a proper fee paid for careful consideration of all the facts. And a surprising amount of disillusionment can be avoided if care is taken to read the wording in certificates and to understand the criteria upon which the valuers were working: a recent case involved a certificate which had been issued in relation to the cost of replacement of a specialised vessel, and clearly stated the fact, but which had been used to justify asset value.

These lessons, learnt the hard way, are bringing changes to the profession. More banks are realising that for a small (relative to the size of their exposure) investment they can protect themselves far better. They are commissioning survey reports on vessels' condition, paying for more rigorous specification of the valuation process, and forming their own long-term relationships with trusted valuers, rather than relying on certificates supplied by the owners. They are beginning to ask valuers to declare for example:

- Conflicts of interest
- The experience of the valuer in relation to the type of vessel
- Details of their P&I insurance cover
- The assumptions upon which the valuation is based

and to insist that details of the valuation may not be discussed with the owners, and only released to them for reference purposes once a certificate has been issued. Parties commissioning valuations in future, and intending to rely upon them, are well advised to follow this example.

Guidelines for Valuers

Valuers, too, have learnt from the litigation fired at colleagues and competitors in recent years. They know that their own reputations and livelihoods are at stake; that they must stand by their own opinions and not allow themselves to be swayed by those of other valuers or by pressure from clients. Some brokers now decline to

undertake valuations at all or have priced the service at a level intended to discourage. Most have increased their fees to levels which better reflect the time and application required to perform the task properly, and the heightened expectations of an increasingly litigious industry.

Valuers should always seek to establish the purpose to which the valuation will be put. Whatever the outcome of these enquiries, they should assume that it may come to be relied upon by persons who have no knowledge of the shipping markets, and they should make clear:

- The physical assumptions upon which the valuation is based, and in particular:
 - o that no inspection of the vessel has been undertaken, nor the classification records examined
 - o that the vessel is assumed to be in good sea-worthy condition, free from recommendations
 - o that a certain description of the vessel's particulars has been received or assumed
- o that these assumptions and the information which they have been given should not be relied upon without verification by physical inspection.
- The commercial assumptions they are using, e.g.:
 - o that the valuation is based upon what might be achieved between a willing buyer and a willing seller and does not reflect what might be achieved in a forced sale; nor does it guarantee that the figure can be realised in an actual transaction.
 - o that the vessel is free of charter; or if the valuation includes a period charter that the valuer's brief does not extend to consideration of the terms of the charter party nor the standing of the charterers.
 - o that the vessel is available for early delivery at a reasonably convenient port
- That the valuation is made at a certain date, and that there is no assurance that the value will remain the same thereafter
- That the valuation has been given solely for the use of the client to whom it is addressed (although this clause may not be enforceable under certain jurisdictions and should not give the valuer a false sense of security).

A fairly common ruse is for an owner to obtain a high valuation from his own broker on the basis that it is for 'internal' or 'insurance' purposes. He will then approach other valuers with a story about needing certificates from several sources, show them the certificate already obtained, and ask them to match it. The temptation is to earn a quick fee without looking too hard at the vessel's particulars. The trick is for the owner to discard the original valuation from his friendly broker, and to present just the 'independent' certificate. Conscientious valuers, however, know that, even if they are not to be left stranded in this manner, safety does not lie in numbers, and that they stand or fall by their own opinions.

Valuers are more aware than ever that they may be called upon, perhaps after a period of several years, to justify the figures which they have given. It is as important as it has always been that as a matter of routine they should keep their contemporary working notes of the comparisons and other processes through which they arrive at their opinions.

Ship valuations need experience and expertise, to be carefully applied. Reliable valuers will always be ready to discuss how they reached their opinions, and to demonstrate that they undertake their obligations diligently and professionally.

SUMMARY

1. There are 3 approaches that are widely used in the valuation of tangible assets
 - a. Income Approach
 - b. Cost Approach
 - c. Sales Comparison Approach
2. A thorough reading of IAS 16 & 36 will indicate the importance of periodic assessments of Recoverable Value and comparison with the Carrying Values to determine if there has been an impairment
3. Needless to emphasise, this goes to show that the subject “valuation”, which in some way is an art and a science in combination, has come a long way and earned tremendous respect and demand
4. Valuers must maintain at all times, independence and objectivity in the conduct of their professional services to ensure that their valuations and assessments are not compromised, rather factually accurate
5. Valuation of Ships requires tremendous knowledge and experience in the maritime trade and the most notable difference between ship valuations and, for example, real estate valuations, is that in almost all cases the ship valuer does not inspect the ship. Reliable valuers, however, will always be ready to discuss how they reached their opinions, and to demonstrate that they undertake their obligations diligently and professionally

SELF-TEST QUESTIONS

1. The Terminal Value refers to
 - a. The Salvage Value of the asset
 - b. The Residual Value of the asset
 - c. An estimate of the earnings capitalised value of the asset assuming that the earnings will grow at a stable rate from thereon
 - d. None of the above
2. The appropriate discount rate to apply to FCFF is?
 - a. The Cost of Equity
 - b. The WACC
 - c. The Min. expected Rate of Return
 - d. None of the above
3. If the Carrying Amount exceeds the Recoverable Amount, the asset is said to be?
 - a. Depreciated
 - b. Impaired
 - c. Either
 - d. Neither
4. NOPAT is also equal to?
 - a. EBIT (1-T)
 - b. CFAT

- c. Either
 - d. Neither
5. Recoverable Amount is the higher of VIU and?
- a. FV
 - b. FVLCS
 - c. TV
 - d. None of the above
1. Describe how we arrive at the NOI in a step by step manner indicating and explaining each of the below terms?
- a. PGI
 - b. EGI
 - c. NOI
2. Explain by an example, how TV is arrived at and its relevance in valuation of Tangible Assets?
3. Write a paragraph on how valuation of ships is a niche subject and requires thorough experience of the maritime trade and subject and the precautions to be taken by the Valuer during valuations?

LIST OF FURTHER READINGS

- 1) Asset Class: Securities or Financial Assets by Registered Valuers Organization
- 2) Corporate Valuation- Theory, Evidence & Practice by Mark E. Zmijewski and Robert Wood Holthausen.
- 3) Property Valuation: The Five Methods by Douglas Scarrett and Sylvia Osborn

REFERENCES

- a) Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Asset, by the American Society of Appraisers
- b) Conference Papers of Institute of Appraisers & Engineers
- c) Newsletters and white papers by the Big4
- d) Reading Journals of ICAI

Lesson 8

Valuation of Intangibles

LESSON OUTLINE

- Introduction
- Definition of Intangible Assets
- Categorization of Intangibles
- Marketing Related
- Customer or Supplier Related
- Technology Related
- Artistic Related
- SUMMARY
- SELF-TEST QUESTIONS

LEARNING OBJECTIVES

Assets are broadly of two kinds- tangibles and intangibles. Both forms of assets occupies significant place in business operations. Like valuation of tangible assets is important so is the case with intangible assets.

There are various forms of intangible assets, like, trademarks, trade names, certification marks, advertising agreements, licence, royalty agreements etc.

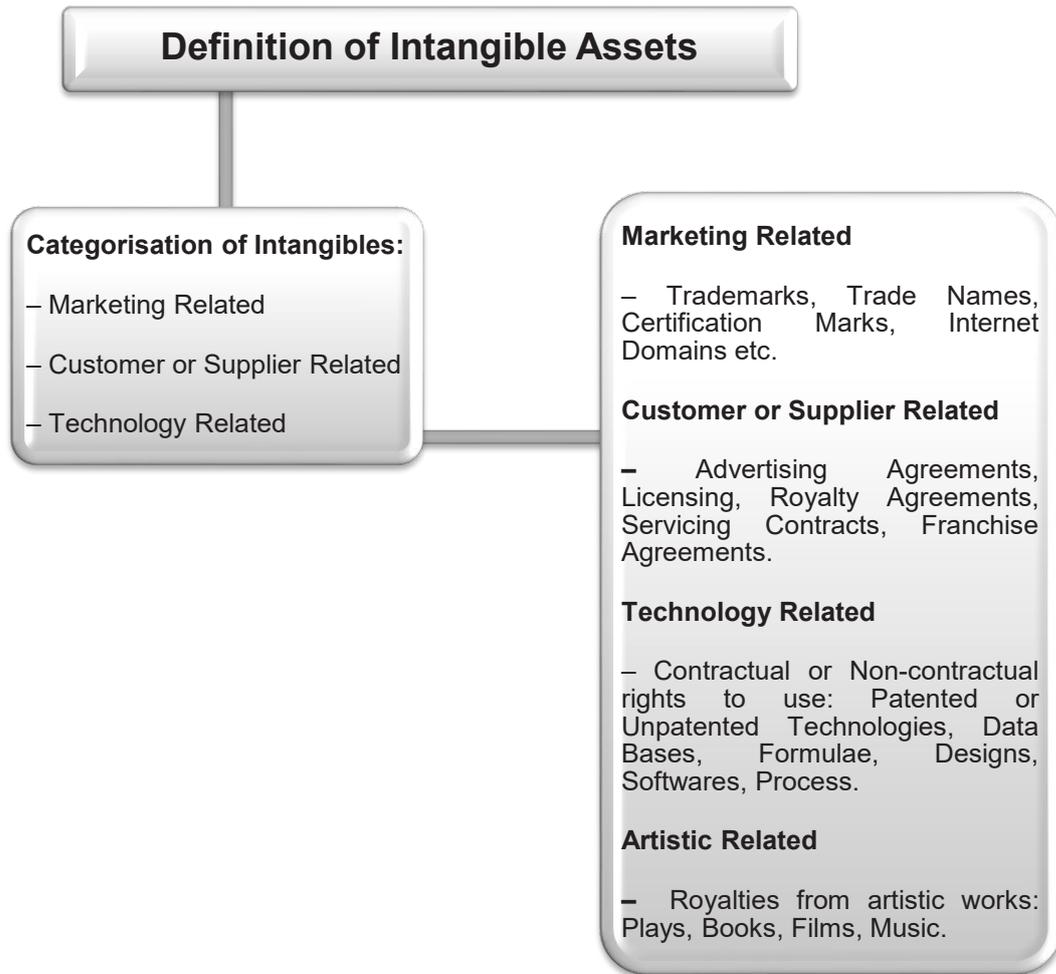
Unless and until a professional have thorough knowledge of various intangible assets and their valuation approaches it will be extremely difficult to discharge the professional obligations.

Keeping the above mentioned point in consideration this study lesson has been prepared focusing upon various crucial aspects of valuation of intangibles.

ORIENTATION

This lesson requires an expert level knowledge in order gain deep insights relating to the valuation of intangible assets. Whether it is merger and acquisitions, winding-up, diversification etc. of business, valuation is an integral component and so valuation of intangible assets. Both manufacturing and service based organizations utilise intangible assets in their business operations and so their valuation occupies an important place.

FAMILY TREE OF CONCEPTS



INTRODUCTION

In practice intangible assets can refer to different things, but are generally used to mean economic assets which do not have physical substance or form, or are not tangible. Intangible assets include brands, goodwill, customer relationships, software and intellectual property related rights. We have compiled on this website a list of intangible assets.

Intangible asset valuations are used, in particular, in accounting practice to recognise assets on business combinations at fair values, which is aimed at improving acquisition accounting transparency. For example, intangible asset valuations can be required for International Financial Reporting Standard 3 (IFRS 3) on business combinations and International Accounting Standard 38 (IAS 38) on intangible assets. There are equivalent US accounting standards, but the accounting provisions are not the same in all respects.

By the end of the twentieth century, the economic literature has witnessed an increased interest in intangible assets, intellectual capital, knowledge assets, and other related terms.

Intellectual capital, intangible assets, intangibles and knowledge assets can be labeled as related concepts. Many authors (Joia, 2000; Lev, 2000; Mayo, 2000; Bontis, 2001; Malhotra, 2000; Sánchez et al., 2001; Marr, Schiuma & Neely, 2002; Lim & Dallimore, 2004; O'Sullivan, 2009) use some of them interchangeably and do not distinguish between them. According to the Organisation for Economic Co-operation and Development (1999, pp. 17), the difference between intangible assets and intellectual capital exists: intangible assets are non-monetary assets without physical substance held for use in the production or supply of goods or services, for rental to others, or for administrative purposes and intellectual capital is the estimated, imputed economic value of intangible assets of a company. Petty and Guthrie (2000) claim that intellectual capital is often considered synonymous with intangible assets and the distinction between them has been vague. Lev (2000) uses the similar approach and points out that in various areas the preferred term differs – in accounting the intangible assets are popular, in the literature on human resources it is an intellectual capital, and the knowledge assets are mainly used by economists. Sánchez et al. (2001) in the final report of the project Meritum – Measuring intangibles to understand and improve innovation management – use the terms intellectual capital, intangibles and intangible assets interchangeably and consider them similar concepts with similar uses.

Probably the most common interchanged terms are intangibles and intangible assets. Cañibano, Covarsí and Sánchez (1999) claim that intangibles may be either assets or liabilities – intangible sources of expected economic benefits or losses. If authors do not deal with intangible liabilities, intangibles then agree with intangible assets. Sveiby (1998) cares just about intangible assets. According to him, the corresponding liability on the other side of the balance sheet is invisible equity, for instance the difference between market and book value of the company. If the positive difference between the market and the book value of the company is regarded as a consequence of the existence of the unrecorded intangible assets, then, as reported by Harvey and Lusch (1999), if there is a negative difference, the unrecorded intangible liabilities exist. Examples of intangible liabilities are weak strategic planning, unsafe working conditions, poor reputation of the firm and so on. Caddy (2000) distinguishes between intangible assets and liabilities too. Correspondingly to Harvey and Lusch (1999), Caddy (2000) argues that if there are intangible assets, from an accounting perspective they have to be balanced by intangible liabilities. Some other contributors to the concept of intangible liabilities can be found in the paper by Parra, Simo and Sallan (2006).

According to Caddy (2000), an intellectual capital is the difference between intangible assets and liabilities. However, the difference between intangible and intellectual exists and we get to it later in this paper. Therefore it is more precise to title the difference between intangible assets and liabilities as intangible capital. When drawing up the balance sheet, it is not sufficient to put intangible assets on the asset side and an adequate “invisible equity” on the other side. A correct way is to put intangibles assets on the left side and intangible liabilities on the right side and only their difference is reflected in the company's value and may be called “invisible equity” or “invisible liability” depending whether the difference is positive or negative.

Intangible assets are knowledge-based assets. They intellectual properties and hence are different from tangible assets. Intangible assets do not have physical substance. Examples of intangible assets are:

- i) Brands
- ii) Patents
- iii) Trademarks
- iv) Designs
- v) Copyrights

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- vi) Technical knowhow
- vii) Software
- viii) Formulations
- ix) Franchises
- x) Goodwill

The needs for intangible assets are :

- i) Business Value addition
- ii) Distinguish product from similar products
- iii) Improve Value for Stake holders
- iv) Create a Business Image

MARKETING RELATED INTANGIBLE ASSETS

Trademark

A trademark, trade mark, or trade-mark is a recognizable sign, design, or expression which identifies products or services of a particular source from those of others, although trademarks used to identify services are usually called service marks.

“A trademark is any name, symbol, figure, letter, word, or mark adopted and used by a manufacturer or merchant in order to designate his or her goods and to distinguish them from those manufactured or sold by others.” ... Name – Coco Chanel is a perfect example of a name of a trademark.

A trademark is a recognizable insignia, phrase or symbol that denotes a specific product or service and legally differentiates it from all other products. A trademark serves to exclusively identify a product or service with a specific company, and is a recognition of that company's ownership of the brand.

A trademark is a sign capable of distinguishing the goods or services of one enterprise from those of other enterprises. Trademarks are protected by intellectual property rights.

Simply put, a trade name is the official name under which a company does business. It is also known as a “doing business as” name, assumed name, or fictitious name. A trade name does not afford any brand name protection or provide you with unlimited rights for the use of that name. However, registering a trade name is an important step for some – but not all – businesses.

A trademark is used to protect your brand name and can also be associated with your trade name. A trademark can also protect symbols, logos and slogans. Your name is one of your most valuable business assets, so it's worth protecting.

An important reason to distinguish between trade names and trademarks is that if a business starts to use its trade name to identify products and services, it could be perceived that the trade name is now functioning as a trademark, which could potentially infringe on existing trademarks.

There are three different types of trademarks that can be registered:

- i) **A word or design mark** : A word mark consists of one or more words, for example, Japp or Marco Polo. It can also be a combination of numbers or letters, such as SVT or 3RT. A word mark is always registered in a standard typeface, which means that you also have to apply for a figurative mark if the

trademark has a certain shape which you want to protect.

- ii) **A certification mark** : Certification marks are usually given for compliance with defined standards, but are not confined to any membership. They may be used by anyone who can certify that the products involved meet certain established standards. Famous certification marks include WOOLMARK which certifies that the goods on which it is used are made of 100% wool.
- iii) **Figurative marks / logos** : Figurative marks are trademarks which consist of a figure or a figure combined with a word. This also includes word marks designed with a particular font, either in black and white or in colour.

It is to be noted that trademarks and service marks symbols are used with unregistered marks: The federal registration symbol, or ®, is reserved for marks registered in the U.S. Patent and Trademark Office. It is essential to comprehend the relevance of trademark in IPR. In this regard, it is to be noted that a trademark is a sign capable of distinguishing the goods or services of one enterprise from those of other enterprises. Trademarks are protected by intellectual property rights.

Facets and Strengths of Trademarks

There are four facets of trademarks: (1) fanciful or arbitrary, (2) suggestive, (3) descriptive, and (4) generic. Fanciful or arbitrary marks are the strongest. Generic marks cannot be registered and offer no protection.

Now coming to the strengths of trademarks, a term is considered a trademark and receives protection only when it's distinctive. The public needs to be able to distinguish the mark associated with your product from the goods of your competitors. The more distinctive a trademark is, the stronger it is.

A mark can fall into five categories, from the most distinctive (and strongest) to the least distinctive:

- i) **Fanciful marks** : A fanciful trademark is what's known as an inherently distinctive mark. It provides the trademark owner with one of the, if not, strongest kinds of trademarks. And what a fanciful trademark is a combination of letters or symbols signifying nothing other than the marks product or service. Put another way, if not for the product or service to which that fanciful trademark pertains; there could be no possible meaning for that particular mark. Examples include Exxon, Kodak, and even Google, arguably.
- ii) **Arbitrary marks** : Arbitrary marks are real words with a meaning that isn't associated with the product sold. An example is the Apple trademark. An apple is a type of fruit, and it couldn't be used as a trademark in the agricultural sector. However, it can be registered as a trademark in association with the computer sector.
- iii) **Suggestive marks** : A suggestive mark is an allusive word that suggests a characteristic of the product or service that is sold. However, suggestive marks are different from descriptive ones because the consumer has to use a little imagination to understand what the product is. Examples of suggestive marks include Microsoft (software for microcomputers), Citibank (financial services), and Jaguar (cars).
- iv) **Descriptive marks** : Descriptive marks are words that merely describe the product they are associated with. Since a customer can't identify the specific product with such a mark, descriptive marks aren't considered trademarks. They can't receive any protection unless they acquire secondary meaning, which usually takes a long time, if it happens at all. Examples of descriptive marks are "104 Key" (computer keyboards have 104 keys) and "deep bowl."

United States trademark law treats surnames exactly as if they were descriptive marks. A trademark is considered "primarily a surname" if the public doesn't immediately identify it with a product or service. Surnames as marks aren't granted protection unless they've acquired a secondary meaning over time. In this case, the trademark is protected and no one can use it for another product. An example is the

surname “McDonald.” A man named Bob MacDonald couldn’t open a restaurant and call it “McDonald’s,” no matter if that’s his surname, because “McDonald’s” has acquired a secondary meaning and is thus a protected trademark.

- v) **Generic marks:** Generic marks are words that define a product, for example, “smartphone,” “email,” or “bread.” Generic words cannot be trademarks. The federal government has in fact determined that no one can have exclusive rights to a word of common use.

Duration and Registration of a Trademark

The term of a federal trademark is 10 years, with 10-year renewal terms. However, the USPTO (United States Patent and Trademark Office) requires that between the fifth and sixth year after the date of registration, the registrant must file an affidavit stating that the mark is still in use. If no affidavit is filed, the registration is cancelled.

State trademark registration may be obtained for \$100–\$200. Federal trademark registration extends your protection nationwide and offers other important advantages, but it typically costs more: **\$275–\$375** for each class of goods and services that you want to protect. In India the trade mark registrations entails reasonable cost.

In case of India, the following steps needs to be followed:

1. To register a trademark, go to the India Patent and Trademark Office’s Web site,
2. Make sure someone else hasn’t already registered the mark your category by checking the Trademark Electronic Search System database.

An important point to be taken into consideration pertaining to trademark is to ensure that there is no trademark infringement. Trademark infringement is the unauthorized use of a trademark or service mark (or a substantially similar mark) on competing or related goods and services. The success of a lawsuit to stop the infringement turns on whether the defendant’s use causes a likelihood of confusion in the average consumer.

Trademarks, copyrights, and patents protect different types of intellectual property. A trademark typically protects brand names and logos used on goods and services. A copyright protects an original artistic or literary work. A patent protects an invention.

Some Critical Issues

i) ***Is tagline a trademark?***

Those pesky little tagline trademarks. We tend to think of trademarks as company and product names. However, if a tagline is being used to identify the source of a company’s goods or services, it can be registered with United States Patent and Trademark Office (USPTO) as well.

ii) ***Is wordmark a trademark?***

A trademark may be located on a package, label, a voucher, or on the product itself. ... A wordmark, word mark or logotype is usually a distinct text-only typographic treatment of the name of a company, institution, or product name used for purposes of identification and branding.

iii) ***What is an advantage to registering a copyright?***

The advantages of registering a copyright include the following: ... If registration is made within 3 months of publication of the work or at any time prior to an infringement of the work, the copyright owner is entitled to seek statutory damages and attorney’s fees in federal court.

Key Dimensions of trademarks

Normally, a trademark has the following main functions: it functions to distinguish a source, to indicate an origin,

to guarantee quality and function of advertising or association. In fact, the first two functions of the trademark are mutually interdependent, and should always be considered together.

The term “well-known trade mark” has been defined in the Trade Marks Act, 1999 and refers to a mark which has become so to the substantial segment of the public which uses such goods or receives such services that the use of such mark in relation to other goods or services would be likely to be taken as indicating a connection in the course of trade or rendering of services between those goods or services and a person using the mark in relation to the first mentioned goods or services.

As per the Statute, the Registrar of Trade Marks shall not require as a condition, for determining whether a trade mark is a well-known trade mark, any of the following, namely:

- (i) that the trade mark has been used in India,
- (ii) that the trade mark has been registered.
- (iii) that the application for registration of the trade mark has been filed in India.
- (iv) that the trade mark –
 - (a) is well known in; or
 - (b) has been registered in; or
 - (c) in respect of which an application for registration has been filed in, any jurisdiction other than India; or
- (v) that the trade mark is well known to the public at large in India.

Registering a Trade Name

Naming your business is an important branding exercise. If you choose to name your business as anything other than your own personal name (i.e. a “trade name”), then you’ll need to register it with the appropriate authority as a “doing business as” (DBA) name.

Consider this scenario: John Smith sets up a painting business and chooses to name it “John Smith Painting.” Because “John Smith Painting” is considered a DBA name (or trade name), John will need to register it as a fictitious business name with a government agency.

You need a DBA in the following scenarios:

- *Sole Proprietors or Partnerships* – If you wish to start a business under any name other than your real one, you’ll need to register a DBA name so you can do business under the DBA name.
- *Existing Corporations or Companies or LLPs* – If your business is already incorporated and you want to do business under a different name, you will need to register a DBA.

Note that many sole proprietors maintain a DBA or trade name to give their business a professional image, yet still use their own name on tax forms and invoices.

Depending on where your business is located, you’ll need to register your DBA name through either your county clerk’s office or your state government. *Note:* Not all states require fictitious business names or DBA registration. SBA’s Business Name Registration page has more information about the process, plus links to the registration authorities in each state.

Registering Your Trademark

Choosing to register a trademark is up to you, but your business name and identity is one of its most valuable assets, so it's worth protecting.

Registering a trademark guarantees exclusive use, establishes legally that your mark is not already being used, and provides government protection from any liability or infringement issues that may arise. Being cautious in the beginning can certainly save you trouble in the long run. You may choose to personally apply for trademark registration or hire an intellectual property lawyer to register for you.

- Determine whether your product is eligible for a trademark
- Conduct a trademark search using TESS (Trademark Electronic Search System)

Because it can be tricky to identify potential infringement or clashes, and the penalties for doing so are high, it's worth talking to a good intellectual property lawyer to ensure you cover all bases.

Certification Marks

India has a comprehensive system of product certifications governed by laws made by the Parliament of India at various times. These certifications are managed by various agencies, and hold various statuses before the law. Some of these marks are mandatory for such products to be manufactured or to be placed in the Indian market while some of the marks hold only an advisory status. All the industrial standardization and industrial product certifications are governed by the Bureau of Indian Standards, the national standards organization of India, while standards for other areas (like agricultural products) are developed and managed by other governmental agencies.

The state enforced certification marks presently in India are (alphabetical list):

- Agmark for all agricultural products.
- BIS hallmark (**BIS hallmark**) certifies the purity of gold jewellery.
- Ecomark is an ecolabel for various products issued by the Bureau of Indian Standards. Voluntary and promotional.
- FPO mark. A mandatory mark for all processed fruit products in India. Certifies that the product was manufactured in a hygienic 'food-safe' environment.
- Geographical Indications marks, defined under the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), have been in force 2003. Examples, include the Darjeeling tea and Basmati **mark**.
- India Organic certification mark for organically farmed food products. Certifies that the product conforms to the specifications of *National Standards for Organic Products, 2000* and any eventual amendments. The certification is issued by testing centres accredited by the Agricultural and Processed Food Products Export Development Authority (APEDA) under the National Program for Organic Production of the Government of India.
- ISI mark. For industrial product. Certifies that a product conforms to a set of standards laid by the Bureau of Indian Standards.
- Non Polluting Vehicle mark on motor vehicles certifying conformity to the Bharat Stage emission standards.
- FSSAI for all food products.

Other Marks

These are mandatory marks or labels required by the law in India, but are not exactly certifications marks (alphabetical list).

- Toxicity label is mandatory on the containers of pesticides sold in India. Identifies the level of toxicity of the pesticide in four levels
- Vegetarian mark (green dot symbol) and the Non-vegetarian mark (brown dot symbol), either of this is mandatory for packaged food products. To distinguish between vegetarian and non-vegetarian foods.

Non-Statutory Marks

There are other non-statutory certification marks or schemes in India which are promoted by the Government of India, by policy, or through governmental or semi-governmental agencies. But these certifications bear no legal status in the nation and are purely promotional in nature.

Examples of such certifications are:

- Silk Mark. Certifies that a piece of textile is pure silk. Managed by the 'Silk Mark Organisation of India'.
- The *Ayush Mark* or the *Ayush Product Certification Scheme* for herbal products by the *Department of Ayush*.
- The Darjeeling tea certification mark, a geographical indication mark for tea produced in Darjeeling.

Certification Marks issued for different products in India

- i) **BIS Hallmark** : The BIS hallmark is a hallmarking system for gold as well as silver jewellery sold in India certifying the purity of the metal. It certifies that the piece of jewellery conforms to a set of standards laid by the Bureau of Indian Standards, the national standards organization of India. India is the second biggest market for gold and its jewellery.
- ii) **AGMARK** : AGMARK is a certification mark employed on agricultural products in India, assuring that they conform to a set of standards approved by the Directorate of Marketing and Inspection, an agency of the Government of India. The AGMARK is legally enforced in India by the Agricultural Produce (Grading and Marking) Act of 1937 (and amended in 1986). The present AGMARK standards cover quality guidelines for 205 different commodities spanning a variety of Pulses, Cereals, Essential Oils, Vegetable Oils, Fruits & Vegetables, and semi-processed products like Vermicelli.

The term agmark was coined by joining the words 'Ag' to mean agriculture and 'mark' for a certification mark. This term was introduced originally in the bill presented in the parliament of India for the Agricultural Produce (Grading and Marking) Act.

- iii) **ISI Mark** : We have all heard of products proudly proclaiming their ISI mark. ISI stands for the Indian Standards Institute, a body set up when India gained Independence to create standards needed for orderly commercial growth and maintaining quality in industrial production. By the mid-80s the country's socio-economic climate had changed, triggering the need to set up a stronger body, the Bureau of Indian Standards (BIS), which then took over ISI. But the term "ISI mark" continues to be used to mean that a certain product conforms to the quality standards set up by the government.

BIS is authorised by a legislation of 1986 to offer product certification. This certification programme is basically voluntary. Any manufacturer who feels confident enough that his product has the ability to meet the BIS standard can apply for product certification in two ways:

- a) Submitting an application at the nearest BIS office. A BIS officer will then evaluate at the factory level, the capability of the manufacturer to produce goods according to the standards laid down for the category. Samples are tested at the factory and outside. If the evaluation is satisfactory

and the product passes the tests, a licence is granted and the manufacturer can use the coveted ISI mark.

- b) The manufacturer provides test reports to BIS after it gets the product tested in the bureau's labs and gets the necessary documents certified independently. BIS is supposed to check the veracity of the reports within a month and grant a licence for usage of the ISI mark.
- iv) **FPO Mark** : The FPO mark is a certification mark mandatory on all processed fruit products sold in India such as packaged fruit beverages, fruit-jams, crushes and squashes, pickles, dehydrated fruit products, and fruit extracts, following the Food Safety and Standards Act of 2006. The FPO mark guarantees that the product was manufactured in a hygienic 'food-safe' environment, thus ensuring that the product is fit for consumption.

The standards have been in force since 1955 by the law of Fruit Products Order, after which the mark is named, but the mark itself got a mandatory status only after the Food Safety and Standards Act of 2006. A FPO license is, in fact, necessary to start a fruit processing industry in India. The agency that develops standards for this purpose and that which issues the mark is the Ministry of Food Processing Industries of the Government of India.

- v) **Non Polluting Vehicle Mark** : It is a mandatory certification mark required on all new motor vehicles sold in India. The mark certifies that the motor vehicle conforms to the relevant version of Bharat Stage Emission Standards. ...
1. India Organic:
 2. Ecomark or Eco mark:
- vi) **The India Organic certification mark for organically farmed food products** : Certifies that the product conforms to the specifications of *National Standards for Organic Products, 2000* and any eventual amendments. The certification is issued by testing centres accredited by the Agricultural and Processed Food Products Export Development Authority (APEDA) under the National Program for Organic Production of the Government of India.

Domain Name

A domain name is your website name. A domain name is the address where Internet users can access your website. A domain name is used for finding and identifying computers on the Internet. Computers use IP addresses, which are a series of number. However, it is difficult for humans to remember strings of numbers. Because of this, domain names were developed and used to identify entities on the Internet rather than using IP addresses.

A domain name can be any combination of letters and numbers, and it can be used in combination of the various domain name extensions, such as .com, .net and more.

The domain name must be registered before you can use it. Every domain name is unique. No two websites can have the same domain name. If someone types in www.yourdomain.com, it will go to your website and no one else's.

For example, the domain name microsoft.com represents about a dozen IP addresses. Domain names are used in URLs to identify particular Web pages. ... Because the Internet is based on IP addresses, not domain names, every Web server requires a DomainName System (DNS) server to translate domain names into IP addresses.

Different types of domains

- i) **TLD - Top Level Domains**: These are at the highest level in the DNS structure of the Internet. There are

several different types of TLD's, being:

a) **ccTLD - country code Top Level Domains**

Two letter domains established for geographical locations; for example; .au signifies Australia. When originally designated, usually only residents of a country could register their corresponding ccTLD; but over the years quite a few countries have allowed parties outside their shores to register website names. An example of this is Tuvalu (.tv).

In the case of .au domain names, strict rules are still in place (and that's a good thing). For example, .com.au registrants must still be Australians or have registered business interests in Australia. The registration eligibility criteria for au names has meant .au is still strongly associated with Australia and has fostered a great deal of trust and confidence in local and even overseas online shoppers.

b) **gTLD - generic Top Level Domain**

The best known generic TLD's include .com, .net, .biz, .org and .info - these can be registered by anyone, anywhere in the world. However, some of the new gTLD's more recently released have various restrictions.

c) **IDN ccTLD - internationalised country code top-level domains**

A top-level name with a specially encoded format that allows it to be displayed in a non-Latin character set (i.e. special characters).

Original top-level domains

Name	Entity	Administrator
.int	international organizations	Internet Assigned Numbers Authority
.edu	education	Educause (via Verisign)
.gov	U.S. national and state government agencies	General Services Administration (via Verisign)
.mil	U.S. military	United States Department of Defense

- ii) *Second Level:* Directly below a TLD in the DNS hierarchy, e.g. .com.au
- iii) *Third level:* Directly below a second level in the DNS hierarchy. e.g. domainregistration.com.au The difference between second and third level can be a little confusing. For example, hotmail.com is considered a second level domain, but hotmail.com.au would be classed as a third level.
- iv) *Subdomain:* Part of a higher ranked domain name in DNS hierarchy; e.g. example.domainregistration.com.au. Some services offer subdomain "registration" - but this usually isn't ideal for businesses and should probably be avoided for establishing a commercial website as the registrant of the upper hierarchy name has control over the address. Having your own name can also help with credibility.

As mentioned, understanding the differences between the above really aren't all that important - but something you will need to know is how to register a domain name. It's also a good idea to pick up some tips on choosing domains before you start your search and registration process.

Difference between Domain Extensions

To create a website – means to take a lot of different fine points into consideration. One of the important issues is a choice of the domain extension which represents the site's address on the internet. The domain name helps users to find your website in the web space and also it allows you to differentiate the types of websites.

There are two the most spread domain name extensions at the moment: .com (commercial) and .net (network). It is obvious, that .com is more appropriate for e-commerce, business and all kinds of projects that will let you make money online. On the other hand, the .net extension is better for networking services, blogs, email etc.

- i) *.Com*: First of all, .com domain extension is the most common on the internet and it is more memorable for the people who are searching for the website they've heard about. It is easier to keep .com in mind and, besides, this extension looks more professional and reliable for the people who want to use the product or services of an organization. Hence, it is much better if an organization want to build its brand online. By the way, the online presence will be higher because .com extension is ranking better than any other domain extension.

Of course, there are several disadvantages that bring .com extensions. The first one is the price for the domain name that an organization have to pay to keep it secure because there is a giant amount of websites which can have familiar names. The second reason is that the organization can't use .com for the sites which don't have integration with e-commerce. The brand will just not fit the domain name and it can have a negative impact on the ranking. Thus, if the organization want to "conquer" a specific area it should better use the proper domain names for the concrete region like .ua, .us, .uk and so on.

- ii) *.Net*: As for the .net domain extension, it takes the second place in the popularity rating and it also has its advantages. Despite the general opinion, .net ranks as good as .com, so there is no difference between the searching engines what domain extension name do the organization use, the main role is played by a name. Also, it is easier to keep a good online with .net.

It should be noted that the rivalry among the websites which are using .net is not so embittered, so the organization have more chances to secure the name it like. The icing on the cake is the price, which is noticeably lower than .com has, so it is a great opportunity for non-commerce websites to save the money.

The ten largest domain extensions unite a whopping 150 million registrations:

- 1) .COM: 82.01 million
- 2) .DE (Germany): 13.05 million
- 3) .CN (China): 12.55 million
- 4) .NET: 12.42 million
- 5) .UK (United Kingdom): 7.83 million
- 6) .ORG: 7.79 million
- 7) .INFO: 5.24 million
- 8) .NL (Netherlands): 3.5 million
- 9) .EU (European Union): 2.98 million
- 10) .RU (Russia): 2.31 million

Free Domain Name

Some web hosts offer free domain names, however, the domain names reflects the host. For example, [yourname.webhost.com]. A domain name in this format is also known as a subdomain.

Although the domain is free and functional on the Internet, it has its limitations:

- Most search engines do not accept subdomains from free web hosting providers.
- It is not easy for your visitors to find your website, as now they need to remember your website

name as well as your host's URL.

- You will not be able to transfer the subdomain to another web host.

Best Domain Name Registrars Compared

1. Namecheap. Namecheap is a solid choice for registering your domain name. ...
2. Bluehost. Bluehost is well known as a web host, they're typically regarded as one of the best hosts for those just getting started online. ...
3. HostGator. ...
4. GoDaddy. ...
5. Hover. ...
6. Gandi. ...
7. Dreamhost. ...
8. Name.com.

Follow the steps below to help you pick the perfect domain name.

1. Make it easy to type. Finding a domain name that's easy to type is critical to online success.
2. Keep it short. ...
3. Use keywords. ...
4. Target your area. ...
5. Avoid numbers and hyphens. ...
6. Be memorable. ...
7. Research it. ...
8. Use an appropriate domain name extension.

Valid characters for com.au domain names | Domain Name Registrar .

.us is the Internet country code top-level domain (ccTLD) for the United States of America. It was established in 1985. Registrants of .us domains must be American citizens, residents, or organizations, or a foreign entity with a presence in the United States of America.

How can I get a free domain name?

Just enter your desired domain name, choose one or more TLDs and click the "check" button. In a few seconds you will have the results. You can register your cheap domain names and get them "parked", where they will be waiting for use, for as long as you want.

Steps for using Domain Names

1. Go to the Domains page, select your site, and choose the Add Domain option. ...
2. Under "Map your domain without moving it from your current registrar" click the Buy Domain Mapping button.

Determining the value of Domain Names

Domain names are some of the most interesting digital assets out there. The vast majority of them are more or less valueless. One can register them for under \$5 and the upkeep is trivial. Web hosts throw in free domain names with their packages.

A Caselet on Trademark- Cadbury vs. ITC Limited



In November 2013, ITC Ltd won a trademark infringement case against Cadbury India, which declared that Cadbury India no longer owned three trademarks containing the word Eclairs. The order was passed after a battle that lasted 10 years. The patent board ordered the removal of the three trademarks, namely: Chocolate Eclairs, Orange flavored chocolate éclairs and Chocolate éclairs pop as it was of the

opinion that Cadbury India had no evidence pertaining to the use of the trademarks once they were registered. The Intellectual Property Appellate Board is authorized to remove a trademark for non-usage or lack of evidence of usage for 5 years in a row from the date of application for registration of the trademark under Section 47 of the Trademarks Act, 1999. Though Cadbury claimed of using the Trademark since 1972, it couldn't provide evidence for the same. The order implies that Cadbury cannot claim ownership of the three trademarks and cannot hold anyone responsible for trademark infringement.

CUSTOMER OR SUPPLIER RELATED

Advertising Terms & Conditions

“Advertisement” means any kind of promotional or advertising material (including, but not limited to, advertorial content, classified and/or recruitment advertising) that is, as the case may be: (i) to be printed in a Print Publication and/or (ii) to be published or otherwise displayed by electronic means (including, but not limited to, banner, skyscraper, pop-up, roadblock, leader, belly bands, cover wraps, tip ons, inserts, button or other forms of online or electronic display advertising) via or as part of or in connection with any Online Publication.

Discussing about advertising terms and conditions, it will be interesting to peruse the legal scenario in India pertaining to advertising as they have an implication on advertising terms and conditions.

1. *Consumer Protection Act, 1986* - Section 6 of the Act grants consumers the right to be informed about the quality, quantity, potency, purity, standard and price of goods or services, as the case may be so as to protect the consumer against unfair trade practices. Section 2(r) of the Act, under the definition of the term “unfair trade practice”, covers the gamut of false advertisements including misrepresentations or false allurements. Redress against such unfair trade practices pertaining to false advertisements may be sought under the Act

Cigarettes and other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003- Section 5 of this Act, inter alia, prohibits both direct & indirect advertisement of tobacco products in all forms of audio, visual and print media;

2. *Cable Television Networks (Regulations) Act, 1995 and Cable Television Networks (Amendment) Rules, 2006* – Section 6 of the Cable Television Networks (Regulations) Act, 1995 provides that no person shall transmit or re-transmit through a cable service any advertisement unless such advertisement is in conformity with the advertisement code prescribed under the Cable Television Networks (Amendment) Rules, 2006. However, the aforesaid provision does not apply to programmes of foreign satellite channels which can be received without the use of any specialized gadgets or decoder. Rule 7 of the Cable Television Networks (Amendment) Rules, 2006 lays down the “Advertising Code” for cable services which are formulated to conform to the laws of the country and to ensure that advertisements do not offend morality, decency and religious susceptibilities of the subscribers;
3. *Doordarshan/ All India Radio (AIR) Advertisement Code* – Doordarshan and AIR, both under the control of Prasar Bharati (a statutory autonomous body established under the Prasar Bharati Act), follow a comprehensive code for commercial advertisements which control the content and nature of

advertisements that can be relayed over the agencies;

4. *Drug and Magic Remedies (Objectionable Advertisement) Act, 1954* – This Act purports to regulate the advertisements of drugs in certain cases and to prohibit the advertising for certain purposes of remedies alleged to possess magic qualities and to provide for matters connected therewith;
5. *Drugs and Cosmetics Act, 1940* – Section 29 of the Act imposes penalty upon whoever uses any report of a test or analysis made by the Central Drugs Laboratory or by a Government Analyst, or any extract from such report, for the purpose of advertising any drug. The punishment prescribed for such an offence is a fine which may extend up to five hundred rupees and/ or imprisonment up to ten years upon subsequent conviction;

Emblems and Names (Prevention of improper use) Act, 1950 – This piece of legislation prohibits the use of any trade mark or design, any name or emblem specified in the Schedule of the Act or any colorable imitation thereof for the purpose of any trade, business, calling or profession without the previous permission of the Central Government;
6. *Food Safety and Standards Act, 2006* – Section 53 of this Act provides a penalty of up to Rs. 10 lakhs for false and misleading advertisements relating to the description, nature, substance or quality of any food;
7. *Indecent Representation of Women (Prohibition) Act, 1986* – This Act is aimed at prohibiting indecent representation of women through advertisements or in publications, writings, paintings, figures or in any other manner and for matters connected therewith or incidental thereto (Section 3 and 4 of the Act).
8. *Prenatal Diagnostic Techniques (Regulation and Prevention of Misuse) Act, 1994* – Advertisement in any manner regarding facilities of pre-natal determination of sex available at any genetic counseling centre, laboratory, clinic or any other place is prohibited under this Act and has been made a punishable offence under the Act (Section 22);
9. *Young Persons (Harmful Publications) Act, 1956* – Section 3 of the Act, inter alia, imposes penalty for advertising or making known by any means whatsoever that any harmful publication (as defined in the Act) can be procured from or through any person;
10. *The Representation of People Act, 1951* – The display to the public of any election matter by means of cinematograph, television or other similar apparatus in any polling area during the period of forty-eight hours ending with the time fixed for the conclusion of the poll for any election in the polling area is prohibited under the Act (Section 126).
11. *Indian Penal Code, 1806* – The IPC, vide an array of provisions, prohibits obscene, defamatory publication, publication of a lottery and/ or statements creating or promoting disharmony/ enmity in society.

Needless to say, the foregoing laws are in addition to applicable IPR laws and other relevant laws in general.

Regulatory Authorities

Advertising Standards Council of India (ASCI) is a self regulatory voluntary organization of the advertising industry. The ASCI has drawn up a code for self regulation in the advertising industry with a purported view to achieve the acceptance of fair advertising practices in the best interests of the ultimate consumer. The ASCI also lays down similar codes for advertisements in specific sectors/industries from time to time. However, the codes are self-imposed discipline to be followed by those involved in the industry and in no way are the codes mandatory. As such, compliance with the code is rare and very few complaints are actually received by the ASCI on account of non-compliance. Nevertheless, the Cable Television Networks (Amendment) Rules, 2006, under Rule 7(9) makes it mandatory for all advertisements carried by cable services to be compliant with the

ASCI code. According to the ASCI code, complaints against deviant advertisements can be made by any person who considers them to be false, misleading, offensive, or unfair. The Consumer Complaints Council (CCC) considers and decides on the complaints received from the general public including government officials, consumer groups, complaints from one advertiser against another and even suo moto complaints from the member of the ASCI Board or CCC.

The Reserve Bank of India, SEBI and the IRDA are some of the other regulatory authorities that regulate advertisements in their respective fields.

Example of an Advertisement Agreement

This agreement ("Agreement") is hereby made between PA MEDIA GROUP, hereinafter "Publisher," and the undersigned, hereinafter "Advertiser" and "Agency" (if applicable), for the purchase of advertising on Publisher's website located at www.pennlive.com ("Website"), in its print publications ("Newspaper"), on its mobile applications and/or digital newspapers (collectively, "Apps") and/or on its other media/platforms as set forth herein. The parties hereby agree to the following:

1. Advertiser and Agency agree to use and pay for the advertising space set forth in Exhibit A at the rates set forth in Exhibit A.
2. This Agreement shall commence on and continue for a period of one (1) year thereafter, unless terminated earlier as set forth herein. This Agreement shall automatically renew for additional one (1) year periods for the same advertising commitment set forth in Exhibit A, provided that (a) Publisher has the right not to renew this Agreement in the event Advertiser and/or Agency have an outstanding balance at the time of such renewal; and (b) each party has the right to terminate such automatic renewal by providing the other party with written notice of termination at least sixty (60) days prior to such renewal date.
3. Orders for all advertising units in Publisher's Newspaper, Website and/or Apps are non-cancelable. In the event that (a) Advertiser uses or pays for less advertising than that specified herein or the Advertiser or Agency otherwise breaches the terms of this Agreement, or (b) if at any time Publisher in its reasonable judgment determines that Advertiser is not likely to have published the total amount of advertising specified herein during the term of this Agreement, any rate discount will be retroactively nullified and Advertiser and Agency will be charged the difference between the rates charged and the rates applicable for the volume of space actually used and paid for, in accordance with Publisher's applicable rate schedules ("short-rate"). In such event, Advertiser and Agency must reimburse Publisher for the short-rate within ten (10) days of Publisher's invoice therefor and Advertiser will thereafter pay for advertising at the open rate or at the newly determined rate(s) (as applicable).
4. Advertiser and Agency shall pay for such advertising at the rates set forth in this Agreement (if specified herein) or Publisher's rate card applicable at the time of the publication of the advertising. Volume discounts and Agency discounts are net rates. No other discounts apply.
5. Payment for advertising shall be made on or before the 30th day of the month following that in which advertising is published. All advertising production fees (if any) shall be billed and are immediately due in full within the first month of the ad campaign. Failure of Advertiser and its Agency, if there is one, to comply with this requirement shall, at the option of Publisher, be considered a breach of this Agreement. If payment is made by Agency, allowable commissions may be deducted. If any bill is not paid by its due date, commissions shall be deemed not earned and the gross amount of the bill shall be paid in full. Publisher may, at its option, require cash with order or otherwise change the payment terms at any time.
6. This Agreement is not subject to rebates.
7. Advertiser and Agency, if there be one, each agrees to be jointly and severally liable for the payment

of all bills and charges incurred. Advertiser authorizes Publisher, at its election, to tender any bill to Agency, and such tender shall constitute notice to Advertiser of the bill and shall in no way impair the joint and several liability of Advertiser and Agency. Payment by Advertiser to Agency shall not discharge Advertiser's liability to Publisher. The rights of Publisher shall in no way be affected by any dispute or claim as between Advertiser and Agency. Advertiser confirms that it has appointed Agency, if one is specified, to be its authorized representative with respect to all matters relating to advertising placed on Advertiser's behalf with the understanding that Agency may be paid a commission.

8. Advertiser and its Agency, if there be one, represent and warrant that: (i) Advertiser's websites, mobile sites, applications, and/or similar services that are associated with advertising purchased hereunder shall contain all necessary consumer disclosures required by applicable federal, state and local laws, rules and regulations, including, but not limited to, a conspicuous link to a clear, accurate, and up-to-date Privacy Policy that: (a) discloses (1) the usage of third party technology; (2) the participation of third party service providers; and (3) the data collection and usage by such service providers and from such third party technology; and (b) complies with all applicable privacy laws, rules and regulations; (ii) it will not merge personally identifiable information with information previously collected as non-personally identifiable without robust notice of, and the end-user's prior affirmation (i.e., "opt-in") consent to, that merger; (iii) there is nothing in any advertisement or other material (including but not limited to software and/or product samples) provided by Advertiser or Agency, or in any material to which the advertisement or other material links or refers, that violates any personal or proprietary right of any third party (including, but not limited to, copyright, trademark, patent, service mark, misappropriation, unfair competition, trade secret, privacy publicity rights, etc.), constitutes false advertising, is harmful, or violates any law or governmental regulation; (iv) none of the advertisements or other materials provided to Publisher for display on its Websites or Apps cause the download or delivery of any software application, executable code, any virus or malicious or social engineering (e.g., phishing) code or features; and (v) it will not conduct or undertake, or authorize any third party to conduct or undertake, any unlawful or improper actions in connection with the Websites or Apps, including, but not limited to, generating automated, fraudulent or otherwise invalid clicks or impressions on Publisher's Websites or Apps. As part of the consideration to induce Publisher to publish, distribute, display, perform or transmit (collectively referred to herein as "Publish" or "Published" or "Publishing") such advertisement, Advertiser and its Agency, if there be one, each agrees to jointly and severally defend, indemnify and hold harmless Publisher, its affiliates, employees, and representatives against all liability, loss, damage and expense of any nature, including but not limited to attorneys' fees, arising out of (a) the Publishing of any advertisement submitted by or on behalf of the Advertiser regardless of whether Publisher participated in the creation of such advertisement, or the linkage of any advertisement to any other material, or the loss, theft, use, or misuse of any credit or debit card or other payment, financial, or personal information; (b) any violation of the CAN-SPAM Act or other laws relating to Advertiser's advertisements, including, but not limited to, commercial messages e-mailed on Advertiser's behalf by Publisher; (c) the products and/or services promoted, sold, presented and/or contained in Advertiser's advertisements; and (d) a breach or alleged breach of its covenants, warranties and obligations under these advertising contract terms and conditions.
9. Advertiser shall have the right to revoke its agency at any time during the period of this Agreement effective upon receipt by Publisher of notice in writing; in such event, Publisher may, at its option, terminate this Agreement. If Advertiser shall designate another agent Publisher may, at its option, recognize such agent upon receipt of an agreement by said agent to be bound by the terms of this Agreement and to become liable for the payment of all bills due and to become due under this Agreement.
10. Publisher reserves the right, at its absolute discretion and at any time, to cancel any advertising or reject any advertising copy, whether or not the same has already been acknowledged and/or previously Published, including but not limited to for reasons relating to the contents of the advertisement or

any technology associated with the advertisement. In the event of such cancellation or rejection by Publisher, advertising already run shall be paid for at the rate that would apply if the entire order were Published and no short rate will apply. The rejection of copy by the Publisher shall require Advertiser and/or Agency to supply new copy acceptable to the Publisher. Advertisements that simulate editorial content must be clearly labeled “ADVERTISEMENT” or “PROMOTION” or “SPECIAL ADVERTISING SECTION” at the top of the advertisement, and Publisher may, in its sole discretion, so label such copy.

11. Publisher, at its option, may terminate this Agreement for the breach of any of the terms hereof, it being specifically understood without limitation that failure on the part of either Advertiser or Agency to pay each bill on or before its due date shall constitute a breach. Should Publisher terminate this Agreement, all charges incurred together with short rate charges shall be immediately due and payable. The following sections herein shall survive any termination or expiration of this Agreement: 3, 5, 7, 8, 12, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 27 and 28.
12. Any bill tendered by Publisher shall be conclusive as to the correctness of the item or items therein set forth and shall constitute an account stated unless written objection is made thereto within ten days from the rendering thereof. In addition, unless otherwise agreed on the cover page of this Agreement, all impressions and/or other measurements of ads hereunder shall be solely based on Publisher's calculations. 2 PR67425.
13. This Agreement may not be assigned by Advertiser or Agency without the prior written consent of Publisher, and any assignment without such consent shall be null and void. Advertiser or Agency may not use any space for the advertisement either directly or indirectly of any business organization, enterprise, product, or service other than that for which the advertising space is provided by Publisher, nor may Advertiser or Agency authorize any others to use any advertising space.
14. Orders containing terms, rates or conditions or specifying positions, facings, editorial adjacencies or other requirements may be accepted but such terms, rates, conditions or specifications are not binding unless Publisher has specifically agreed to them in writing.
15. In the event of a suspension of publication of Publisher's Newspaper, Website and/or Apps due to strike, accident, fire, flood, computer or software/ network malfunction, congestion, repair, Internet outages or any other cause or contingencies beyond the control of Publisher, it is understood and agreed that such suspension shall not invalidate this contract, but a) will give Publisher the option to cancel this Agreement, or if Publisher does not do so, b) upon resumption of publication this contract shall be continued and no liability for damages shall be incurred by the Publisher by reason of such suspension.
16. Interest will accrue at a rate of one and one-half percent (1.5%) per month (or such other maximum amount as is permissible by law) on all past due balances. If it becomes necessary to place with an attorney for collection any claim for funds due under the terms of this Agreement, then Advertiser and Agency agree to pay to Publisher the reasonable attorneys' fees arising from such collection.
17. If during the period of this Agreement Publisher revises its advertising rates, Advertiser and Agency agree to be bound by such rates provided Publisher gives at least thirty (30) days notice of such increase. However, in such event Advertiser may elect not to place any further advertisements after the effective date of the increase, and if no space is used after the effective date of the increase, no short rate will be charged on space used prior to such increase.
18. Publisher does not guarantee any given level of circulation or readership. In addition, Publisher makes no guarantee or representation as to the quantity and quality of visits, impressions, circulation, or other usage of its Website or Apps or of the advertisement, or as to the use of any particular tracking or information gathering devices, unless Publisher expressly agrees otherwise in writing. In addition, all impressions and/or other measurements of advertisements for Publisher's Websites and Apps shall

be based solely on Publisher's calculations for its Websites and Apps. To the extent Publisher fails to provide Advertiser/Agency with any guaranteed impressions on its Website or Apps (if expressly agreed to by Publisher in writing), Publisher will provide as a sole remedy a makegood, by extending the order beyond the contracted advertising flight period until the remainder of the guaranteed impressions are delivered. For the purpose of clarification, Advertisers/ Agencies that request a special billing schedule or an upfront bill will not receive refunds/adjustments in the case of under delivery of guaranteed impressions (if applicable).

19. Publisher's sole liability (and Advertiser's and Agent's sole remedy) for errors and/or omissions by Publisher in published advertisements shall be to provide Advertiser a credit for the actual space of the error or omission (in no event shall such credit exceed the total amount paid to Publisher for the applicable advertisement), and Publisher shall have no liability unless the error or omission is brought to Publisher's attention no later than 5 working days after the advertisement is first Published. However, if a copy of the advertisement was provided to or reviewed by Advertiser, Publisher shall have no liability. in no event shall publisher be liable to advertiser, agency or any other parties for any further damages of any kind arising from this agreement or any breach thereof, including but not limited to indirect, special or consequential damages or lost profits.
20. Failure by Publisher to enforce any provision of this Agreement shall not be considered a waiver of such provision. Unless inconsistent with the express terms of this Agreement, all orders are subject to the terms of Publisher's applicable rate card. Advertiser and Agency acknowledge receipt of a copy of said rate card.
21. Advertiser and Agency recognize that the copyright in any advertisements created by Publisher is owned by Publisher. Advertiser and/or Agency shall not use any advertisements created by Publisher hereunder for any other purpose, including but not limited to, in any other publication, website and/or on any other platform without Publisher's prior written approval in each instance. As to all other advertisements, Advertiser and Agency agree that Publisher has the non-exclusive right, for the full term of copyright, by itself or through third parties, to republish, retransmit, re-perform, redistribute or otherwise re-use any advertisements submitted hereunder in any form in which the advertisements may be Published or used (in any media now in existence or hereafter developed) in whole or in any part, whether or not combined with material of others.
22. This Agreement will be construed in accordance with the laws of the Commonwealth of Pennsylvania. Any action based on or alleging a breach of this Agreement must be commenced in a state or federal court in Harrisburg, Pennsylvania; and the parties hereby consent to the exclusive jurisdiction of such courts in connection with this Agreement.
23. Advertiser and Agency understand that advertisements and/or other commercial messages sent on its behalf by Publisher via electronic mail may be governed by federal, state and local laws, rules and regulations, including without limitation the Controlling the Assault of Non-Solicited Pornography and Marketing Act of 2003 and any acts related thereto, and including the interpretation thereof by the FTC or other governmental authorities (collectively, the "CAN-SPAM Act") and state "Do Not E-mail" registries. Advertiser and Agency agree to comply with all such applicable laws, rules and regulations. Without limiting the generality of the foregoing, Advertiser and Agency shall fulfill all obligations of a "Sender" as defined in the CAN-SPAM Act, and comply with Publisher's policies intended to comply therewith.
24. All data collected by Publisher, Advertiser and/or any third party in connection with this Agreement shall be exclusively owned by Publisher, and not used or disclosed by Advertiser/Agency without Publisher's prior written approval in each instance.
25. The titles and logos of the Publisher's Newspapers, Website and Apps are registered trademarks and/

or trademarks protected under common laws. Neither the titles nor the logos may be used without the express written permission of Publisher.

26. This Agreement may be executed by Advertiser/Agency by manual, facsimile or scanned PDF signatures (or by clicking “accept” or similar terminology online), and in any number of counterparts, each of which will be deemed an original and all which together will constitute one and the same instrument.
27. Publisher disclaims all warranties and/or guarantees, express or implied, including, but not limited to, warranties for no infringement, accuracy, availability, uptime, merchantability and/or fitness for any particular purpose in connection with the display, performance and transmission of advertisements in publisher’s newspapers, websites and apps. Advertiser and Agency acknowledge that third parties other than Publisher may generate automated, fraudulent or otherwise invalid/improper impressions, conversions, inquiries, clicks or other actions on Advertiser’s advertisements displayed on Publisher’s Websites and/or Apps. As between Advertiser and Publisher, Advertiser accepts the risk of any such improper actions. Advertiser’s exclusive remedy for such suspected improper actions is for Advertiser to request a refund relating to its impacted advertisements in the form of advertising credits on the applicable Website or App within thirty (30) days from the end of the calendar month in which such advertisement is initially displayed on the applicable Website or App. Any advertising credit refunds in connection with the Advertiser’s aforementioned requests are within the sole discretion of Publisher.
28. The foregoing terms shall govern the relationship between Publisher and Advertiser and Agency. Publisher has not made any representations to Advertiser or Agency that are not contained herein. Unless expressly agreed to in writing signed by an officer or senior executive of Publisher, no other terms and conditions in insertion orders, contracts, click-through terms and conditions, copy instruction, letters, or otherwise will be binding on Publisher.

Licensing Agreements

A **licensing** agreement is a written agreement by which the owner of a property or activity gives another party permission to use that property under specified terms and conditions.

A business arrangement in which one company gives another company permission to manufacture its product for a specified payment. There are few faster or more profitable ways to grow your business than by licensing patents, trademarks, copyrights, designs, and other intellectual property to others.

It will be interesting to note the difference between ‘Licence’ and ‘License’. This confusion is so similar to practice and practise that once you’ve learned the difference for one, you instantly know it for the other. Licence is a noun, license is a verb. Before learning to drive, you apply for a provisional driving licence, but the DVLA must license you to drive.

Key Points Pertaining to License

1. Licensing means renting or leasing of an intangible asset. It is a process of creating and managing contracts between the owner of a brand and a company or individual who wants to use the brand in association with a product, for an agreed period of time, within an agreed territory.
2. An IP licensing agreement occurs between an IP rights owner (“licensor”) and someone who is authorised to use the rights (“licensee”) in exchange for monetary value in the form of a fee or a royalty.
3. A licensing fee can be an amount of money paid by an individual or business to a government agency for the privilege of performing a certain service or engaging in a certain line of business.

Significant points pertaining to Licensing of a Product

- a) **Know your stuff.** First and foremost, to have any chance of licensing your invention, you must know your stuff. You have to become an expert in the field to which your invention applies. You should be able

to rattle off who the competition is, what the potential market size is, what the projected demand for your product is and why your product is the best to meet and satisfy that market demand.

- b) **Know the downside:** While it's important to be passionate about your idea, it's also important to be sober. Your credibility will be assessed by potential licensees partly based on whether you present a realistic analysis of the risks the licensee will have to deal with—things like product failure, the potential for slower-than-expected customer adoption, etc.
- c) **Present like a pro:** Information you present to potential licensees should be provided in written form and in a PowerPoint presentation. The information should include market research data, competitive analysis information, patent status and extent of coverage. It helps to provide a letter from your patent attorney summarizing the initial search results and any other pertinent opinions relating to the extent and value of the patent coverage awarded to you. Also include your product specifications, drawings, prototypes – even if they demonstrate only what the product looks like without the actual functionality. Add to this presentation your production cost estimates, testimonials you've collected, and any and all other materials that help demonstrate the potential your invention has in the marketplace.
- d) **Get it protected:** Big corporations usually have intellectual property or licensing departments specifically set up to handle and manage the inflow of product licensing opportunities. Most of these offices will not accept any submission of a licensing opportunity for which a patent has not yet been issued. And many will not sign a confidentiality agreement, while many others will require that only their own agreement be signed. In some cases, companies might be willing to sign your confidentiality agreement, but only rarely.
- e) **Submit smart:** Work closely with your intellectual property attorney when submitting an idea to a potential licensee to ensure that your idea is adequately protected. Never sign a confidentiality agreement without first having an attorney review it. And never turn over materials to a company without your attorney giving you the green light. It may be dangerous unless you have adequate patent protection in place or a confidentiality agreement that your attorney deems sufficient to protect your intellectual property.

Analyze your targeted licensee. Always do research on the company you're targeting prior to pitching them. Check to see if the potential licensee has the manufacturing and distribution capability you need already in place. If they do, their risk is mitigated to a substantial degree, and they will be much more likely to seriously consider the opportunity. Believe it or not, though, you may have to educate them on how your product can fit into their existing lines of business.

- f) **Don't reinvent procedures:** It's important to follow the established protocol of a licensee when submitting your idea for consideration. If you attempt to bend the rules, your submission can be stopped dead in its tracks before ever being given consideration. If a targeted licensee has a licensing office, always start there to get a case file started at the company's licensing office, and attend to their confidentiality procedures.
- g) **Find a champion:** Once you have clearance from the company to present your idea, always try to find a champion from within the company who gets excited about your idea and works to "pull" the idea into the company rather than you simply attempting to "push" the idea onto the company.
- h) **"No" is an opportunity:** Remember, it's always safer for the company to say no to an idea than it is to say yes. The key is to be able to overcome the likely onslaught of negative responses the company will undoubtedly throw your way. It's imperative (even in the midst of a no) that instead of hanging up or walking out in defeat, you ask to understand specifically why. If someone says no to you, that's a perfect opportunity to learn. Immediately ask why? What are the concerns? Are they insurmountable? What could be done to address the concerns? You'll use what you learn to create a yes! next time around.

- i) **Multiple baskets:** As the old saying goes, “don’t put all your eggs in one basket.” Relying on a single potential licensee just adds more risk to a challenge that already has plenty of inherent risk. It’s smart to approach more than one potential licensee to increase your odds for success. Further, playing multiple bidders off of each other can actually put some well-needed leverage on your side of the negotiating table by bringing out the competitive nature of the potential licensees. Ultimately, if you generate serious interest (and your aim is to license your invention to just one licensee) be sure you know when to stop playing competitors against each other. The moment you select your licensee, you’ll have to begin building good faith with them and you don’t want “bad blood” to tarnish how they perceive you and work with you in the long run.

A Caselet on Licensing – Glenmark



Glenmark is a renowned, integrated pharmaceutical major with path-breaking research on inflammatory diseases, metabolic diseases and pain to its credit. Spread over 80 countries across the globe, Glenmark, over the years, has successfully entered into several licensing agreements with its contemporaries in the pharmaceutical sector. Glenmark

inked an out licensing deal with Forest Laboratories in 2004 for Oglemilast (still at the development stage while the deal was signed), a vital drug for Chronic Obstructive Pulmonary Disorder (COPD) and asthma. The deal was approximately worth 190 million USD in the US. Later, Glenmark signed a deal worth 53 million USD with Tejin Pharma Ltd in Japan for the same drug. As of 2010, Glenmark had received 35 million USD from Forest Laboratories and 6 million USD from Tejin Pharma Ltd.

Patent Licensing

Patent licensing is part of how to patent an idea and is a revocable agreement between a patent owner and a licensee to transfer interest in a patent to a licensee, who can benefit from and enforce the intellectual property rights. During this time, the licensee can make or sell the invention or design.

Patents are monopoly rights and intangible by nature. Section 48 of the Indian patents act, 1970 deals exclusively with the rights of patentees which prevents the third parties, who do not have the consent of the patentee, from the act of making, using, offering for sale, selling or importing for those purposes the patented product in India. Similarly, the act also prevents the third parties, who do not have the consent of the patentee, from the act of using that patented process, and from the act of using, offering for sale, selling or importing for those purposes the product obtained directly by that patented process in India.

In certain cases the patentee may not have enough resources, business acumen or technical know-how for carrying out one’s invention. In such cases licensing offers the patentee to authorize the person whom the license has been given to exercise the patent rights under certain circumstances. Licensing is considered as a lucrative way of raising finances. The person granting the license is referred to as the licensor and the person acquiring the license is referred to as licensee. Licensing is also referred to as technology transfer. The terms and conditions for licensing may be followed as laid in the licensing agreement which should take into account the interest of both the parties. To put it simple the merchandise sellers are given the license by the patentee to use one’s brand.

Forms of Patents

There are three types of patents: plant, utility and design patents.

Plant Patent

A plant patent is granted by the government to an inventor who has invented or discovered a new variety of plant. This patent lasts 20 years from the date of filing and prevents anyone else from selling or using the plant.

Utility Patent

Utility patents are granted to inventors who invent or discover any new and useful process, software or machine, or any new functional improvement to an existing invention. A utility patent usually lasts 20 years from the filing date.

Design Patent

A design patent protects an invention's ornamental design, improved decorative appearance or shape. This patent is appropriate when the fundamental product already exists and is not being improved upon in function but only in style. This patent lasts 14 years from the date the patent is granted.

Valuation of Patent

It is very important for businesses to account for a patent's value in their books. This value is especially important to businesses in transactions involving mergers and acquisitions, business dissolution, bankruptcy and infringement analysis.

A key part of valuing a patent is to obtain a value of the invention in question. It does not make good business sense to obtain a patent on an invention that will not result in a suitable return for the inventor. Because patents are intangible assets, it is often difficult to assign a monetary value to them. The most common patent-valuation method is the economic-analysis method. The economic-analysis valuation method has three approaches: cost, income and market.

- a) **Cost Approach:** This approach states that a patent's value is the replacement cost, or the amount that would be necessary to replace the protection right on the invention. The replacement cost of an item refers to the amount of money that would be paid, at the present time, to replace the item. If an inventor has an item that he or she has patented, the patent's value would be the amount of money required to replace that invention. A prospective client would not be willing to pay more for a patent than the amount he or she would have to pay to obtain an equivalent protection right.
- b) **Income Approach:** This method looks to future cash flows in determining valuation. It states that a patent's value is the present value of the incremental cash flows or cost savings it will help provide. When a company or individual develops a product that has the potential to be patented, the underlying hope is that the patented product will cause an increase in sales, or at least be a cost-saving measure in the company. This approach states that the patent's value is the current cash value of these future benefits.
- c) **Market Approach:** This methodology involves determining what a willing buyer would pay for similar property. In other words, the patent's value is approximately equal to the value of similar patents or patented products that have been sold and purchased before.

Two things must be in place for this approach to be used for patent valuation:

- ✓ Existence of an active market for the patent, or a similar one
- ✓ Past transactions of comparable property.

A Caselet on Patents- Ericsson vs. Xiaomi

In December 2014, Ericsson filed a suit against Xiaomi in India for the alleged infringement of the 8-Standard Essential Patents. The Delhi High Court issued a temporary restraining order on the sales, manufacturing, advertising, and import of Xiaomi's handsets. Xiaomi asserted that its latest devices (as of December 2014), the Mi3, Redmi1S and the Redmi Note 4G, contained Qualcomm chipsets that made use of technologies patented by

Ericsson. Xiaomi subsequently challenged the order before a Division Bench of the Delhi High Court, which provided temporary relief to Xiaomi by allowing it to resume the sale, import, manufacture, and advertisement of its mobile devices subject to the fulfillment of the following conditions:

- Permitted to sell only those devices with a Qualcomm chip.
- A royalty payment of INR 100 per device imported from its launch date upto 5th January 2015. A fixed deposit account was opened for the deposition of the same amount for three months during case proceedings.

Royalty Agreements

Compensation for the use of property, usually copyrighted works, patented inventions, or natural resources, expressed as a percentage of receipts from using the property or as a payment for each unit produced.

When a person creates a book, song, play, or painting, the work is considered Intellectual Property. Similarly, when an inventor receives a patent on his invention, the inventor has intellectual property rights in the thing created. Typically, authors, songwriters, composers, playwrights, and inventors do not have the financial ability to fully exploit the commercial use of their creations. They must turn to businesses that specialize in the marketing of intellectual property. When a business obtains the right to market the creation, the creator usually receives compensation in the form of a royalty.

A royalty agreement is part of the contract that the creator of the work negotiates with the business that seeks to exploit the creation. A royalty can be as simple as a fixed amount of money for each copy of a book or compact disc sold by the business. For example, a novelist agrees to let a publisher publish her new book. For granting the publisher the rights to the book, the novelist will receive \$3 for each copy sold. If the novelist is a best-selling author, the publisher may agree to a higher royalty rate. Book and music publishers sometimes give an advance against royalties to an author or musician when the contract is signed. For example, the novelist might receive \$5,000 as an advance against her royalties. In this case the publisher will keep the first \$5,000 of the royalties to cover the cash advance. Typically, if the book failed to produce enough royalties to cover the advance, the publisher would write off the difference as a loss. However, a publisher might sue an author to recover an advance if the author never produces a publishable manuscript.

A playwright's royalty may be based on a percentage of the box office receipts from each performance of the play. An inventor's royalty might be an amount per unit sold or a percentage of the profits generated by the invention. In some cases it might be both. Because a royalty is one of the terms negotiated in a contract, the type and amount will depend on the bargaining power of the parties.

Under the law royalties are Personal Property. When a person dies, the heirs receive the royalties. For example, when Elvis Presley died, his estate went to his daughter Lisa Marie, who now collects the royalties from the music company that sells her father's recordings. Royalty agreements are also used in the mineral and gas industries. These agreements have much in common with the origin of the term. For many centuries in Great Britain, the Crown owned all the gold and silver mines. A private business could mine these "royal" metals only if it made a payment, a royalty, to the Crown.

When, for example, a petroleum company wants to drill for oil on a person's land, the company negotiates a royalty agreement with the owner of the mineral rights. If the company strikes oil, the owner of the mineral rights will receive a royalty based on a percentage of the barrels pumped out of the wells. The owner may receive the royalty in kind (the actual oil) or in value (the dollar amount agreed to in the contract), based on the total production from the property.

The schedule for royalty payments is specified in the contract. Quarterly or annual payments are typical. The royalty owner has the right to make an independent accounting of the business records to ensure that the figures upon which the royalty is based are accurate.

Comprehending Royalty Valuation through Music Approach

The two most popular approaches to value for intellectual property in the music sector are: Income Approach and Market Approach.

1) **The Income Approach:** The value of intellectual property is best defined by its ability to generate income in the future. An income-based method calculates the future royalty expectations to determine a present value by using “the time value of money.”

Several different income methods exist that investors can use when assessing the value of royalty streams. The most common is the discounted cash flow (DCF) method.

Discounted Cash Flow (DCF) Method

This method determines the value of intellectual property by examining the present value of expected cash flows in the future. Investors want to evaluate the expected cash flows in future years and then use an appropriate discount rate to determine present value.

Investors must understand the “Time Value of Money” (TVM) and their expected risk when projecting growth or decay of annual royalty streams. As a reminder, TVM is the concept that capital available today – in the present – is worth more than the same amount of money at a future date due to the possible earning capacity.

When using the income approach, the goal is to determine three important measurements for the associated royalty asset.

- The projected future revenue stream
- The payback period and lifecycle
- The risks associated with this asset’s ability to generate revenue

Royalty owners can explore the data from PROs to determine past income payments. The payback period is defined by the amount of time it will take to recoup the initial investment using the Time Value of Money. This guide breaks down additional factors in Chapter 5 to determine the risks associated with the asset.

How to Use the Income Approach

Income generation is the most reliable data point used to value the current net present value of a royalty stream and its future revenue potential. Let’s consider a hypothetical. Say that a copyright has 10 years left before it becomes public domain.

This royalty stream is expected to provide \$10,000 in the first of these 10 years. One might project that these royalties will decline by 5% annually over the duration of the copyright based on the risk factors at play.

We can determine, based on that 5% annual decline, how much money this royalty stream may generate over the next decade. In the example below, the royalty stream is expected to make roughly \$80,252 over 10 years.

Year	Expected Royalties (\$)
1	10,000.00
2	9,500.00
3	9,025.00
4	8,573.75
5	8,145.06
6	7,737.81

7	7,350.92
8	6,983.37
9	6,634.20
10	6,302.49
Total	80,262.61

2. **The Market Approach:** Music royalties are not liquid assets. They are not commonly traded. There is no financial exchange that allows you to buy and sell them each day.

With the market approach, we want to compare the assets to other assets that have sold on the market to set a valuation.

Two primary steps exist in this valuation method: a) The screening process and b) The adjustment process.

The screening process involves seeking information on comparative attributes. You can look at historical transactions to find similar assets, the value of their royalty streams, and their sales price.

These transactions give us a baseline to compare what has happened in the past to today's marketplace. Once we have found similar assets with similar attributes, it is time to compare the conditions of the marketplace over time.

The adjustment process – a process of due diligence – centers on our ability to understand more about the assets and the environments in which they perform. That due diligence process helps us “adjust” our expectations of this asset compared to the performance and attributes of others.

Focal Points in Royal Agreements

a) **Sales Vs Net Income:** Contrary to popular belief, companies have considerable latitude in calculating net income. Moreover, a company is at liberty to do whatever it wants to improve operations, including increasing wages, increasing marketing expense, investing in new or more expensive inventory, or even purchasing a new building. These can be one-time expenses that erode net income for one quarter or for an entire year. Sales on the other hand, is a firm calculation. While they may include discounts and/or coupons, sales are firm and cannot be adjusted or manipulated.

b) **Sales Unit Forecast:** To better gauge the potential sales opportunity from your agreement, it's best to ask the company for a sales forecast and the price for which it plans to sell the product. For example, assume the company is paying you royalties based on the use of your name. If the company sells 500 units per month without the use of your invention or name, and it expects to sell 100 more units with the use of your name, the sales unit forecast is 600.

c) **Sales Forecast- Pricing:** Another important aspect of a royalty agreement is pricing. Your terms should include a fair market price for the product as well as an increase in price for the use of your invention or name. For example, if the company plans on selling the product for \$10, which is \$2 more than it sold it for without the use of your name, the sales forecast is calculated by multiplying the intended number of units to be sold by the sales price, or \$6,000.

d) **Guaranteed Minimum:** Even a high royalty percentage is no guarantee of income. Additionally, depending on the type of royalty, it is quite possible that the company may never use your contribution and therefore never owe you a dime. For this reason, it is not uncommon for royalty agreements to include a guaranteed minimum payout.

The Copyrights Scenario

Copyright is an important practical component of intellectual property / IP rights, brands and intangible assets. In general, copyright protects work such as:

- Literary, dramatic, musical and artistic work, including illustration and photography.
- Non-literary written work, such as software, web content and databases.
- Sound and music recordings.
- Film and television recordings.
- Broadcasts.
- The layout of published editions of written, dramatic and musical works.

Copyright gives the right to prevent copying, distributing copies, renting or lending copies, performing, showing or playing in public, making an adaptation, and putting it on the internet. In most countries copyright lasts a minimum of life plus 50 years for most types of written, dramatic and artistic works, and at least 25 years for photographs. It can be different for other types of work.

Valuing copyright requires an in-depth understanding of the particular business and industry in which the copyright operates. Copyright valuation is something Intangible Business has carried out for a number of different copyright properties including books, films, plays, TV, music, characters, images and musicals.

When carrying out a copyright valuation Intangible Business adopts widely accepted approaches based on a combination of the income, market and cost approaches.

- The income approach uses estimates of future estimated economic benefits or cash flows and discounts them, for the associated time and risks involved, to a present value. Each type of copyright has key sensitivities to consider such as the duration of the copyright and the expected lifetime of its creator. Another key consideration during copyright valuation is what drives the value of the copyright. For instance, a living musician might support his back catalogue of recordings through personal appearances and new releases, buoying the copyright valuation. After the musician stops recording, the copyright value may diminish more rapidly than expected as the support is no longer there.
- The market approach uses market based indicators of value. For copyright this can be transactions involving selling, buying, franchising or licensing copyright and related IP rights, which are often in practice bundled together.
- There are two general considerations to the cost approach: the historic cost of creating a copyright and the estimated cost and time that would be required to create equivalent or replacement copyright.

Servicing Contracts

Service contracts are agreements for specific acts, such as painting your house or tuning your car, and are distinguishable from contracts for goods. They're used predominantly by contractors, freelancers, and consultants and, generally involve one party paying another party to perform a certain act.

In other words, service contracts are agreements for specific acts, such as painting your house or tuning your car, and are distinguishable from contracts for goods. They're used predominantly by contractors, freelancers, and consultants and, generally involve one party paying another party to perform a certain act.

A service contract should generally include a description of the services provided and their frequency, an identification of the parties in the contract, the schedule or frequency of supervision/monitoring services (if necessary), the fees for the services provided, how and when payments should be made, when and how a contract may be terminated, how disputes relating to the contract will be resolved and a contingency plan when

applicable. Some contracts also detail provisions related to confidentiality or proprietary information.

When service agreements cover products, the contract may cover repairs, replacement of parts, replacement of the product, diagnosis of the product, upgrading of parts or software, dispatching of a service representative to perform repairs, refunds and/or returns.

For instance, a vehicle service contract can be purchased by a consumer to cover the costs associated with vehicle repair, including parts, labour, and/or sales tax, for certain repairs or replacements that may be required after a manufacturer's warranty expires. Different contracts have different coverage levels.

Forms of Service Contracts

There are many types of service contracts defined by what kind of work is being done. For example, a general service agreement defines the terms of work between a contractor offering services, such as a plumber, a gardener or a repair person, and a property owner, business owner or other client. A consultant service agreement is a contract between a consultant and a client identifying the terms and conditions of the consulting work. When an artist, such as a graphic designer or mural artist, enters into a contract with a business owner or other client, an artist service agreement is necessary. Accountants and bookkeepers need to enter into bookkeeping service agreements with their clients. Another common contract type is a child care service agreement between a child care provider and a parent or legal guardian.

A product service contract, also called an extended warranty, is a type of service contract that is similar to a basic or limited warranty, only this coverage comes at an additional cost, whereas a basic warranty does not. Some of these service agreements are sold separately from the product and offer free protection for the item for a period longer than the basic warranty or for more services than the basic warranty, whereas others are included with the cost of a product and specify repair costs if the item needs to be repaired. When the repair costs are defined, they are often less expensive than the fees charged by a repair person working outside of a service arrangement.

Exploring General Service Agreement

A General Service Agreement, also referred to as a contractor form, an independent contractor agreement, or a contractor agreement, is a contract between a contractor (i.e. gardener, installer, repairer etc.) who will provide services, and a property/business owner

Service level agreement (SLA) and its purpose. A service level agreement or SLA is a formal document that defines a working relationship between parties for a service contract. It is generally more applicable to businesses than to consumers and involves one or more end user parties and a service provider.

Key Components of a Service Level Agreement (SLA)

For businesses and consumers alike, ensuring that concise service level agreements (SLA) are obtained for certain products is crucial to seamless operation and support. As Naomi Karten explains in her work on establishing service level agreements, "A service level agreement is a formal negotiated agreement which helps to identify expectations, clarify responsibilities, and facilitate communication between two parties, typically a service provider and its customers." Therefore, the SLA serves an important purpose as a communication and conflict-reduction tool, as well as an overall expectation management document.

In order to develop a well organized service level agreement, there are six key components noted in this excellent template that should be included:

1. ***Agreement Overview***

The agreement overview includes details such as the individuals involved, effective/expiry date as well as a general statement on what other details the particular SLA will cover.

2. ***Goals and Objectives***

The next section that should be covered is goals and objectives. Here, the purpose of the agreement, including the ability to obtain a mutual agreement, will be outlined.

3. **Stakeholders**

This section defines the parties involved in the agreement. For example, an IT service provider and an IT customer.

4. **Periodic Review**

There should be mention of a periodic review, which will outline the effective/expiry date, as well as the parameters regarding review timelines of a particular SLA.

5. **Service Agreement**

Perhaps the largest section of a service level agreement comes next and is called the service agreement, which features many key components for which the service provider takes responsibility. The topics covered in this section include:

- Service scope, which looks at the specific services offered by the agreement, for example, telephone support.
- Customer requirements, which includes details on payments at agreed upon intervals.
- Service provider requirements are also a part of the service agreement and cover areas that include clarification of response times in cases of service related incidents.
- Service assumptions. Here, protocol on changes to services and the ways in which they are communicated to the stakeholder(s) is discussed.

6. **Service Management**

The final portion of a service level agreement deals with service management. In this section, both service availability and service requests are covered. A concise SLA will feature information on the availability of telephone support, response time for service requests, as well as options regarding remote assistance.

Pricing Approaches

To ensure their buildings or equipment are well maintained, businesses and other organizations often contract with maintenance technicians to provide these services. Customers benefit by having a professional on call for repairs at prices within their budgets, while technicians get a steady source of income. One can compute the contract price based on a variety of factors, including the form of equipment and the time involved.

i) Hourly Rate

One way to calculate the cost of each visit is to base it on the hourly rate and the amount of time it typically takes to perform a complete maintenance check. If it takes three hours to service a printer, for instance, multiply the number of hours by the rate. Repairs and parts would be billed separately. However, if there is a change in a specific part of the equipment every visit, like the cartridges, one can include the cost in the service fee.

ii) The Age of the Equipment

The age of the equipment could help determine her service fees. New and older machines need different levels of service. Machines older than 10 years typically require more attention, repairs and replacement parts. Based on the experience, estimate the amount of time necessary to service a machine under 10 years old and one between 10 and 15 years old, and multiply the hours by the rate. Charge maintenance fees accordingly.

iii) Charging per Device

One can also base the pricing on the number of devices that will be serviced. Estimate how much time it takes to perform maintenance on each device and multiply by the hourly rate. Add the numbers for all the devices in care to arrive at the service fee per visit.

Franchise Agreements

A Franchise Agreement is a legal, binding contract between a franchisor and franchisee.

Franchise terms may be as short as one year, or at the other end of the scale may be granted in perpetuity. Generally however, most franchises are granted for three or five year terms with an option to renew for a corresponding period.

A franchise business is a business in which the owners, or “franchisors”, sell the rights to their business logo, name, and model to third party retail outlets, owned by independent, third party operators, called “franchisees”. Franchises are an extremely common way of doing business.

There are three main types of franchise opportunities available, these are:

- i) **Business format franchises:** A business format franchise is a franchising arrangement where the franchisor provides the franchisee with an established business, including name and trademark, for the franchisee to run independently. Fast food restaurants such as McDonald’s and Burger King are examples of such franchises.

In a business format franchise, each franchised outlet or business should look and act the same. It should provide an identical product or service of identical quality. While each is independently owned and operated, this should make no difference to what the customer receives e.g. McDonalds’ hamburgers should taste the same wherever you buy them. For achieving this the franchisee is also trained by the franchisor in the business model and format including selling, marketing, personnel procedures, inventory, and more.

Some of the characteristics of a business format franchise are given below:

1. The ownership by the franchisor of a name and trade mark, an idea, a secret process, or a piece of equipment, and the goodwill and know-how that is associated with it.
 2. The grant of a licence (the franchise) by the franchisor to another person (the franchisee) permitting the franchisee to exploit this.
 3. The inclusion in the franchise agreement (and elsewhere such as a manual) of regulations and controls relating to the way the franchisee exploits its rights.
 4. Payment by the franchisee to the franchisor for the right to operate the franchise. This can take various forms, such as a royalty on turnover, or a surcharge for the product supplied by the franchise.
 5. Provision of trading and support by the franchisor to the franchisee to enable the franchisee to carry on its business according to the franchisor’s system.
- ii) **Product franchises, or Single operator franchises:** This type of franchise model focuses on individuals who are selling products or delivering a service in a specific trade or industry field. The franchiser will allow you to use their brand name and trademarks, provide you with the uniform and equipment needed to properly represent the brand, and offer you ongoing support. Product franchises are a great option for first-time business owners, independent contractors, and home businesses since the investment needed is usually smaller than that of business format franchises.

A good example of this is an independent contractor investing in a franchise that has an established name and reputation in their field of work. For example, if a self-employed plumber invests in a franchise offering plumbing services, they will then have access to a wider customer base, greater advertising potential, and the support of a team of professionals who will help the plumber to handle bookings, payments, and complaints.

- iii) **Manufacturing franchises:** In manufacturing franchises, the franchiser allows a franchisee to produce items using their brand name and trademark. While this type of franchise is the most popular among food and drink companies, they can also be found throughout the manufacturing industry, from children's toys to cars.

The best example of this would be a soft drinks company. The parent company will produce the concentrated syrup and then sell it, as well as the right to use their brand name and trademarks, to a bottling company. That company will then mix the syrup with water and bottle the finished product before selling it on to various suppliers.

So, there we have it, your introductory guide to the three main types of franchises. If you would like to start your own business or become self-employed, then buying an established franchise is a great place to start. With an experienced franchiser taking care of customer support and providing everything you need to get started, the only risk you have to take is the initial investment.

Valuing a Franchise Business

- a) **The intangible value or “goodwill” of a franchise depends largely on the terms of the franchise agreement.**

A large number of businesses operate as franchises, in which a separate entity (the franchisor) creates a brand identity for a product that is sold through a system of franchised retailers (the franchisees).

Typically, the franchisor has a contractual right to specify certain marketing and operational practices and define franchisees' geographic territories. The franchisee generally pays a royalty and advertising allowance to the franchisor in return for the exclusive right to sell a product or service within the defined geographic area. A typical franchise agreement sets forth the provisions under which the franchisee may utilize the franchisor's trade name and trademark; it also specifies the term, required marketing assistance, method of product distribution, and other factors that define the legal relationship between the two parties.

- b) **Valuation Peculiarities**

Because many franchise agreements prohibit the franchisee from selling the franchise to a third party or require approval by the franchisor, the purposes for business valuation in a franchise setting are narrower than those involving an independent company.

Still, for a variety of reasons – marital dissolution, estate planning, taxation, etc. – the value of a franchise may need to be determined. In the process, it is usually necessary to determine the intangible value or goodwill of the business.

The intangible value of any business is the difference between the total value of the business as a going concern and the total value of the business's tangible assets. The difference arises because the earnings of a business depend not only on its tangible assets (e.g., cash, inventory, and fixed assets) but also on such intangible factors as location, customer relationships, and reputation. When those factors are transferable to a third-party buyer, they take on value that drives up the purchase price.

Fast food restaurants such as McDonald's, Subway or Burger King operate using a franchise system in which the franchisees concede varying amounts of autonomy to the franchisor in exchange for the right to use the brand name and benefit from the franchisor's extensive marketing. The profits of each franchise location result from the combined efforts of the franchisor and franchisee.

The franchisor-franchisee relationship creates special nuances for the valuation of intangible value. When a non-franchised business has a fair market value in excess of its tangible assets, it can be assumed that the difference is due to factors created or controlled by the owner of the business. That conclusion may not hold true, however, in the setting of a franchise, since the income of a franchise business results from the efforts of two different entities: the franchisor and the franchisee.

To classify and value the intangible assets of a franchise business, the valuation professional must distinguish between the intangible value of the franchisor, embodied in the franchise agreement, and the intangible value of the franchisee.

The relevant question: In the event of a loss of the franchisor brand name, would customers continue to patronize the business to such an extent that there would still be goodwill in the business?

c) **Allocation of Goodwill**

In allocating the intangible value between the franchisor and the franchisee, the valuation professional must determine the extent to which each party's actions created the intangible value at issue. However, in the great majority of cases, earnings probably result from the conduct of both parties to the franchise agreement.

There are at least three chief variables in allocating goodwill between the parties.

Control : Where the franchisee's operations are heavily regulated by the franchisor, the intangible value is more likely to come from the franchisor. Conversely, loosely regulated franchisees have considerable opportunity to acquire their own intangible value.

Advertising and Brand Recognition: In many businesses, advertising is essential to the development of a loyal customer base. Most franchise businesses concentrate advertising activity at the national or regional levels; therefore, that factor most often favors the franchisor.

Location : Just as advertising often favors the franchisor in allocating value, location generally favors the franchisee. Location is obviously a factor where, such as in the fast food industry, a particular desirable location is key to the earnings of the business. Where location is a factor, it should logically favor the party who has the right to use the location in the future.

If the franchisee retains the right to operate a restaurant in its present desirable location while switching franchisors or even becoming independent, location-based intangible value would obviously survive the transfer. In this case, location favors the franchisee. If the right to operate a location-dependent business at a particular location resides with the franchisor, not a great deal of intangible value would be allocated to the franchisee.

Valuation of Goodwill

The various methods used for valuing the goodwill are as under:

1) **Years' Purchase of Average Profit Method:**

Under this method, average profit of the last few years is multiplied by one or more number of years in order to ascertain the value of goodwill of the firm. How many years' profit should be taken for calculating average and the said average should be multiplied by how many number of years — both depend on the opinions of the parties concerned. The average profit which is multiplied by the number of years for ascertaining the value of goodwill is known as Years Purchase. It is also called Purchase of Past Profit Method or Average Profit Basis Method.

Majumdar & Co. decides to purchase the business of ABC Ltd. on 31.12.2003. Profits of Banerjee & Co. for the last 6 years were: 1998 Rs. 10,000; 1999 Rs. 8,000; 2000 Rs. 12,000; 2001 Rs. 16,000, 2002 Rs. 25,000 and 2003 Rs. 31,000.

The following additional information about ABC Ltd. . were also supplied:

- (a) A casual income of Rs. 3,000 was included in the profit of 2000 which can never be expected in future.
- (b) Profit of 2001 was reduced by Rs. 1,000 as a result of an extraordinary loss by fire.
- (c) After acquisition of the business, Majumdar & Co. has to pay insurance premium amounting to Rs. 1,000 which was not paid by Banerjee & Co.
- (d) S. Majumdar, the proprietor of Majumdar & Co., was employed in a firm at a monthly salary of Rs. 1,000 p.m. The business of Banerjee & Co. was managed by a salaried manager who was paid a monthly salary of Rs. 4,000. Now, Mr. Majumdar decides to manage the firm after replacing the manager.

Compute the value of Goodwill on the basis of 3 years' purchase of the average profit for the last 4 years.

1. Years' Purchase of Average Profit Method:

Computation of Goodwill

Particulars	Rs.	Rs.
Profit of 2000	12,000	
Less: Casual Income	3,000	9,000
Profit of 2001	16,000	
Add: Abnormal loss	1,000	17,000
Profit of 2002		25,000
Profit of 2003		31,000
Total		82,000

Average profit = Rs 82000 / 4 =	Rs 20,500
Less : Insurance Premium =	Rs 1,000
	Rs 19,500
Add : Manager's Salary =	Rs 4,800
	(Rs 400 x 12)
	Rs 24,300
Less: Majumdar's Salary =	Rs 12,000
	(Rs 1000 x 12)
	Rs 12,300
Expected Net Average Profit :	Rs. 12,300
Therefore, Value of Goodwill = Rs 12,300 x 3 =	Rs. 36,900

2. Years' Purchase of Weighted Average Method:(pg- 256)

The profits of a firm for the year ended 31st March for the last 5 years were as follows:

Year	Profits (Rs)
1	40,000
2	60,000
3	75,000
4	90,000
5	1,05,000

Calculate the value of goodwill on the basis of three years' purchase of weighted average profits after assigning weights 1,2,3,4 and 5 respectively to the profits for years 1,2,3,4 and 5.

Year	Profits (Rs) [A]	Weights [B]	Product (Rs) C = A x B
1	40,000	1	40,000
2	60,000	2	1,20,000
3	75,000	3	2,25,000
4	90,000	4	3,60,000
5	1,05,000	5	5,25,000
	Total	15	12,70,000

Weighted Average Profit = Rs 12,70,000 / 15 = Rs. 84,667

Goodwill = Rs84,667 x 3 = Rs 2,54,000

3. Capitalisation Method:

A firm earns profits of Rs 2,00,000. The normal rate of return in a similar type of business is 10%. The value of total assets (excluding goodwill) and total outsiders' liabilities as on the date of valuation of goodwill are Rs 22,00,000 and Rs 5,60,000 respectively. Calculate the value of goodwill according to capitalization of average profits method

Average profits = Rs 2,00,000

Capitalised value of average profits = Rs 2,00,000 x 100 / 10 = Rs 20,00,000

Net Assets = Total Assets – Outsiders' Liabilities = Rs 22,00,000 – Rs 5,60,000 = Rs 16,40,000

Goodwill = Rs 20,00,000 – Rs 16,40,000 = Rs 3,60,000

Capitalisation of Super Profits:

Under this method first of all we calculate the Super Profits and then calculate the capital needed for earning such super profits on the basis of normal rate of return. This Capital is the value of our Goodwill. The formula is:-

Goodwill = Super Profits X (100/ Normal Rate of Return)

For example ABC Ltd earns a profit of \$ 50,000 by employing a capital of \$ 200,000, The normal rate of return of a firm is 20%. To calculate Goodwill:

Normal Profits = 200,000 – 20/100 = \$ 40,000

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Super profits = 50,000 – 40,000 = \$10,000

Goodwill = 10,000 × 100 / 20 = \$50,000

4. Annuity Method:

The expected profits of a firm for the next 5 years are as follows:

Year	Profits (Rs)
1	2,00,000
2	4,00,000
3	6,00,000
4	8,00,000
5	10,00,000

The total assets of the firm are Rs 40,00,000 and outside liabilities are Rs 22,00,000. The present value factor at 10% is as follows:

Year	PVF
1	0.9091
2	0.8264
3	0.7513
4	0.6830
5	0.6209

Year	1	2	3	4	5
A. Average Profits (Rs)	2,00,000	4,00,000	6,00,000	8,00,000	10,00,000
B. Normal Profits (Rs) [10% of (Rs 40 lakhs – Rs 22 lakh)]	1,80,000	1,80,000	1,80,000	1,80,000	1,80,000
C. Super Profit Rs (A – B)	20,000	2,20,000	4,20,000	6,20,000	8,20,000
D. PVF at 10%	0.9091	0.8264	0.7513	0.6830	0.6209
	Rs 18,182	Rs 1,81,808	Rs 3,15, 546	Rs 4,23,460	Rs 5,09,138

Value of Goodwill = Rs 14,48,134 (present value of super profits of 1,2,3,4 and 5)

5. Super Profits Method:

Super Profits are the profits earned above the normal profits. Under this method Goodwill is calculated on the basis of Super Profits i.e. the excess of actual profits over the average profits. For example if the normal rate of return in a particular type of business is 20% and your investment in the business is \$1,000,000 then your normal profits should be \$ 200,000. But if you earned a net profit of \$ 230,000 then this excess of profits earned over the normal profits i.e. \$ 230,000 – \$ 200,000= Rs.30,000 are your super profits. For calculating Goodwill, Super Profits are multiplied by the agreed number of years of purchase.

Steps for calculating Goodwill under this method are given below:

- i) Normal Profits = Capital Invested X Normal rate of return/100
- ii) Super Profits = Actual Profits – Normal Profits
- iii) Goodwill = Super Profits x No. of years purchased

For example, the capital employed as shown by the books of ABC Ltd is \$ 50,000,000. And the normal rate of return is 10 %. Goodwill is to be calculated on the basis of 3 years purchase of super profits of the last four years. Profits for the last four years are:

Year	Profit/Loss (\$)
2005	10,000,000
2006	12,250,000
2007	7,450,000
2008	5,400,000

Total profits for the last four years = 10,000,000 + 12,250,000 + 7,450,000 + 5,400,000 = \$35,100,000

Average Profits = 35,100,000 / 4 = \$ 8,775,000

Normal Profits = 50,000,000 x 10/100 = \$ 5,000,000

Super Profits = Average/ Actual Profits – Normal Profits = 8,775,000 – 5,000,000 = \$ 3,775,000

Goodwill = 3,775,000 × 3 = \$ 11,325,000

6. Sliding Scale Valuation Method:

The current numerical problem contents of the mentioned topic to be replaced by the following contents.

Computation of Goodwill

First	Rs 6,000	3 years	Rs 18,000
Next	Rs 4,000	2 years	Rs 8,000
Balance	Rs 2,000	1 year	Rs 2,000
Value of Goodwill			Rs 28,000

TECHNOLOGY RELATED

Contractual or Non-Contractual Rights to Use

With the advent of technology, e-commerce businesses have flourished to a remarkable extent across the globe.

We as a customer are dependable on the various transactions which happen through technology whether it is related to the purchasing of products/goods or money transactions etc. You may come across with various online websites dealing with the different services and products such as Amazon, Flipkart, Snapdeal, Paytm etc to name a few.

Going back in an era where there were no technology related transactions, the customers used to get the “written receipt” or “bill” with printed “Terms and Conditions” which were not so exhaustive and complex and also readable to the customers. Moreover, this kind of transaction didn’t carry any privacy issues as well.

However, with the changing scenario, a new concept was introduced in the business world named as a “Technology Contracts” which doesn’t require paper form and the parties to be present at the same time. The Technology contracts consist of certain standard terms and conditions which the user has to agree to proceed further in the process or to complete the transaction. The user has no option but to agree to the terms and conditions being displayed by the e-commerce companies, in case the user will not click on the “I Agree” button they will not be allowed to use the online platform for the requisite purpose and ultimately they have to agree with their unreasonable conditions as well.

In the current market scenario, there are various technology contracts which we deal with such as “Software License Agreement, SaaS/Cloud Agreements, outsourcing contracts etc.

However, there are various terms and conditions posted on the website while going through the same such as “Privacy Policy” and “Terms and Conditions” or “Terms of Usage”. Moreover, usually these both policies are interrelated and one can easily find out the link while going through the respective policies.

E-commerce and E-contracts

Nevertheless, it is to mention herein that our e-contracts have been provided with the legal validity after the enactment of the Information and Technology Act, 2000 which has not only provided the e-contracts their legal position whereas it has also incorporated certain obligations and duties which the intermediaries i.e. e-commerce business has to follow and in case of failure, the penalties have also been provided to shape it in a more stringent and concrete manner.

The important aspect which has been included in the IT Act 2000 is regarding the Intermediary liabilities of e-commerce companies towards the user as “Information Technology (Intermediaries Guidelines) Rules, 2011. As per the rules, the e-commerce companies have to prepare and display the “Privacy Policy” and the “Terms and Conditions” on their website.

Standard Terms and Conditions

There are certain terms and conditions being tagged in by various e-commerce companies such as how you need to use the website or the terms by which a user is governed while dealing or having transactions through online. These standard terms of use and rules and regulations are published on the website in accordance with the IT (Intermediaries Guidelines) Rules, 2011 in Rule 3(1) to have an access of the e-commerce business website.

The following are standard terms of use one can easily find while accessing any e-commerce website:

(a) Eligibility/Competent to Contract

Similar to Indian Contract Act, 1872 the person who is below 18 years are incompetent to contract or is not eligible to use the website. The underlying principle is same as e-contracts are also the legal binding contracts. Therefore, the website usually makes it clear that one should be 18 years or above to use the website or if not should use the website or do the transaction through his/her guardian or parents. Moreover, the website owner has a right to terminate the contract in case it is brought to their notice that the user is not competent to contract.

(b) Use of Website

The user is bound to follow the major binding rules while using the website.

Few binding rules are :

- (i) User shall not use information in any manner whatsoever which doesn't belong to him/her.
- (ii) User shall not share, display, upload etc any information which is defamatory, obscene or which encourages any unlawful activities in any form whatsoever or which is against the integrity and sanctity of our country.
- (iii) The user shall not violate or infringes the intellectual property rights or privacy rights of anyone as the personal information is also being shared here.
- (iv) The information should not contain anything libellous or image, video of any minor or an adult.
- (v) No information shall be shared which is inappropriate in any form and violates the rights of others.
- (vi) No hacking in any form shall be entertained etc.

(c) Privacy

The Privacy Policy usually they include in the terms of usage so that the user shall be aware of privacy obligations they adhere to.

Patented or Unpatented Technologies

A patent is a form of intellectual property. A patent gives its owner the right to exclude others from making, using, selling, and importing an invention for a limited period of time, usually twenty years. Typically, however, a granted patent application must include one or more claims that define the invention.

Examples of Patented Technologies

- a) **Boeing Develops Water Harvesting System Based on Fuel Cells:** Along with earning honorable mention for its drone innovation, Boeing received patent with its novel system for harvesting water, detailed within U.S. Patent No. 9088018, issued under the title *Water Harvesting System*. It protects a water harvesting system including a fuel cell system configured to generate power and fluids, a cooling device which converts materials into water vapor, a collection system collecting the water vapor, a radiator system that transfers heat from the water vapor and an output system directing the water vapor and other fluids from the radiator system. This innovation is designed to produce water for industrial and human consumption in areas of the world where groundwater resources are scarce and rainwater collection schemes cannot provide adequate water supplies.
- b) **Trio of Inventors Pursues IP in Disabling Devices While Driving:** Innovations designed to reduce distracted driving a good deal of intellectual property was discovered regarding technologies meant to reduce the risks of driving while distracted or drowsy. An invention developed by a trio of inventors from Georgia and protected by the issue of U.S. Patent No. 8994492, which is titled *Disablement of User Device Functionality*. It discloses a method for restricting a functionality of user equipment that exists within a particular zone within a vehicle by determining a zone within a driver's region of interest and analyzing signal transmissions to determine the physical proximity of a user equipment within a particular zone. This invention is designed to overcome the limitations that law enforcement experiences when trying to ensure that drivers are not performing distracting actions, such as texting, while driving. The invention is assigned to three co-inventors: Fariborz M. Farhan of Johns Creek, GA; Babak Firoozbakhsh of Marietta, GA; and Afshin Amini of Alpharetta, GA.

Case Study- 1

As a part of the allocation of purchase price, the valuation professional identified internal use software that requires valuation. Discussions with management indicated that they were not aware of any commercially available software at the time of development nor at the present time that would meet their needs. Given the nature of its operations, the company did not have available internal resources to develop the software. As a result, a third-party vendor would be required on a 'rates and hours' basis. Management indicated development of the software would require management involvement and other resources and provided an overhead estimate to account for this element of the development.

Fair value of internal-use technology – Reproduction cost method

Particulars		Amount
Estimated hours to complete – 3 rd party vendor		8,000
Estimated cost per hour		US\$ 40
Indicated value		US\$ 320,000
Plus: Overhead allocation	30%	US\$ 96,000
Indicated value		US\$ 416,000
Less: Obsolescence adjustment	50%	US\$ 208,000
Indicated value of existing technology		US\$ 208,000

The cost approach is typically utilized in measuring the value of early stage technology since the technology is not likely at the point where the profits can be reliably ascertained of the future economic benefits. It may be best suited for technology which is not the direct source of economic earnings for the enterprise, is easily replaceable, and may be of less significant value relative to other assets.

Case Study-II

In performing the purchase price allocation for the acquisition of A Ltd, the valuation professional identifies internally developed, internal use technology at the Company. A comparable technology is available for a license fee of 1 percent of revenues. The technology is only needed for a certain number of products with a finite life.

Fair value of internal-use technology – Relief from royalty method

Particulars		Year 1	Year 2	Year 3	Year 4	Year 5
Total revenue		US\$ 100,000	US\$ 103,000	US\$ 106,090	US\$ 109,273	US\$ 112,551
Growth		NA	3%	3%	3%	3%
Revenue dependent on technology		US\$ 10,000	US\$ 12,000	US\$ 15,000	US\$ 10,000	US\$ 5,000
Royalty rate		1%	1%	1%	1%	1%
Pre-tax royalties		US\$ 100	US\$ 120	US\$ 150	US\$ 100	US\$ 50
Less: Maintenance expense		\$0	US\$ 0	US\$ 0	US\$ 0	US\$ 0
Adjusted pre-tax royalties		US\$ 100	US\$ 120	US\$ 150	US\$ 100	US\$ 50
Income tax	40%	(US\$ 40)	(US\$ 48)	(US\$ 60)	(US\$ 40)	(US\$ 20)
Adjusted after-tax royalties		US\$ 60	US\$ 72	US\$ 90	US\$ 60	US\$ 30

Present value factor	16%	0.93	0.80	0.69	0.59	0.51
Present value of cashflows		US\$ 56	US\$ 58	US\$ 62	US\$ 36	US\$ 15
Sum of present value of cashflows						US\$ 227
Plus: Tax amortization benefit						US\$ 43
Fair value of internal use technology		US\$ 270				

Use of the relief from royalty method to value the intangible is appropriate when –

- the importance of the technology to the business is similar to that of a comparable, licensed asset;
- the rights of ownership can be compared to the rights under a license (for example, similar geographic market coverage, duration, exclusivity, limitation, technology, and type of customer); &
- it is practical and possible to license it separately and market royalty rates can be observed that confirm comparable economic rights for similar intellectual property.

Sometimes, in the selection of royalty rate, analysts may make the assumption that whoever owns that technology is constantly updating that technology and that is factored in the royalty rate being paid. That is why at times obsolescence factor is not applied in the relief from royalty method.

Unpatented Technologies

Not protected by trademark or patent or copyright; “non-proprietary products are in the public domain and anyone can produce or distribute them”

Know-how and trade secrets are types of intangible assets that represent unpatented rather than patented technology. Thus, similar valuation principles apply. At the same time, these assets might comprise early-stage technology with unprotectable secret know-how that is difficult to assess. Trade secrets have a value to an organization, as they are unique to it; however, trade secrets are usually not a marketable product or do not directly generate cash flows, except to the extent they reduce costs. For valuing non-patented know-how and trade secrets, the overall techniques for intangible assets – Cost Approach, Market Approach, and Income Approach – apply. The application of a specific method would differ depending on the valuation purpose, the item to be assessed, and the availability of data. The critical factor for valuing these intangibles is to determine whether they are well protected by the entity and do not become public knowledge.

Databases

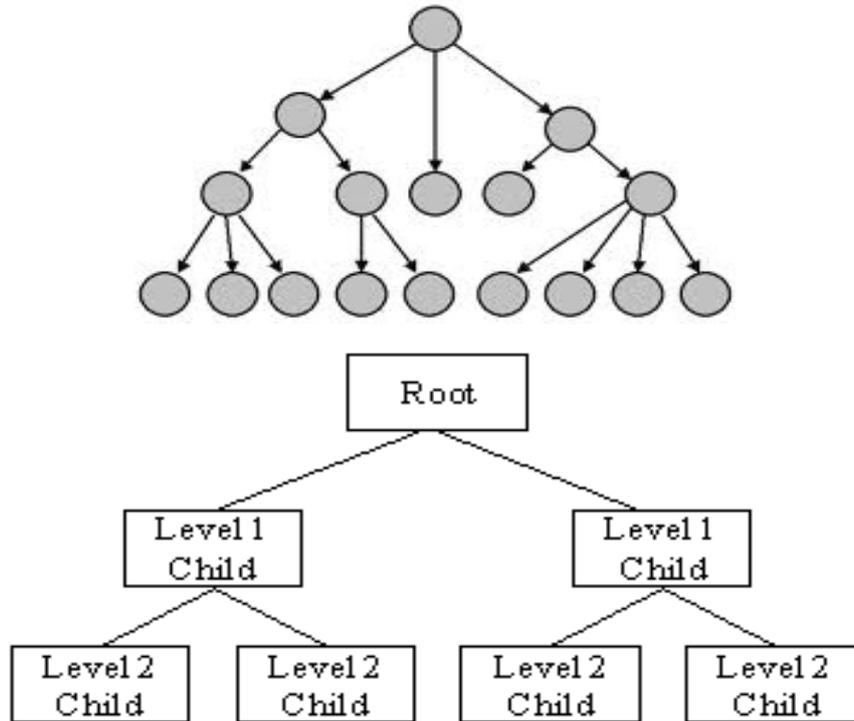
A database is a collection of information that is organized so that it can be easily accessed, managed and updated. Databases process workloads to create and update themselves, querying the data they contain and running applications against it.

A database system is referred to as self-describing because it not only contains the database itself, but also metadata which defines and describes the data and relationships between tables in the database. This information is used by the DBMS software or database users if needed.

There are four structural types of database management systems: Hierarchical databases, Network databases, Relational databases and Object-Oriented databases.

a) **Hierarchical databases:** In the Hierarchical Database Model we have to learn about the databases. It is very fast and simple. In a hierarchical database, records contain information about their groups of parent/child relationships, just like as a tree structure. The structure implies that a record can have also a repeating

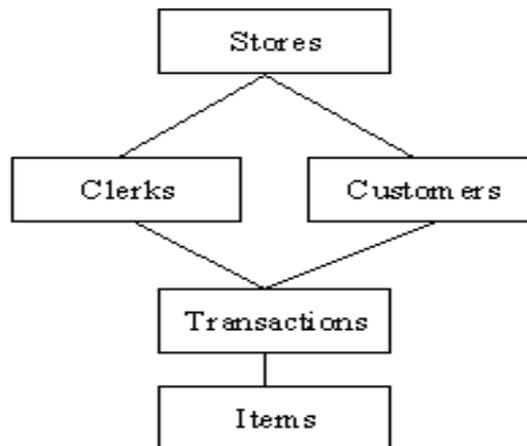
information. In this structure Data follows a series of records, It is a set of field values attached to it. It collects all records together as a record type. These record types are the equivalent of tables in the relational model, and with the individual records being the equivalent of rows. To create links between these record types, the hierarchical model uses these type Relationships.



Source: <https://www.c-sharpcorner.com/UploadFile/65fc13/types-of-database-management-systems/>

b) **Network databases:** A network databases are mainly used on large digital computers. It more connections can be made between different types of data, network databases are considered more efficiency It contains limitations must be considered when we have to use this kind of database. It is Similar to the hierarchical databases, network databases .Network databases are similar to hierarchical databases by also having a hierarchical structure. A network database looks more like a cobweb or interconnected network of records.

In network databases, children are called members and parents are called occupier. The difference between each child or member can have more than one parent.



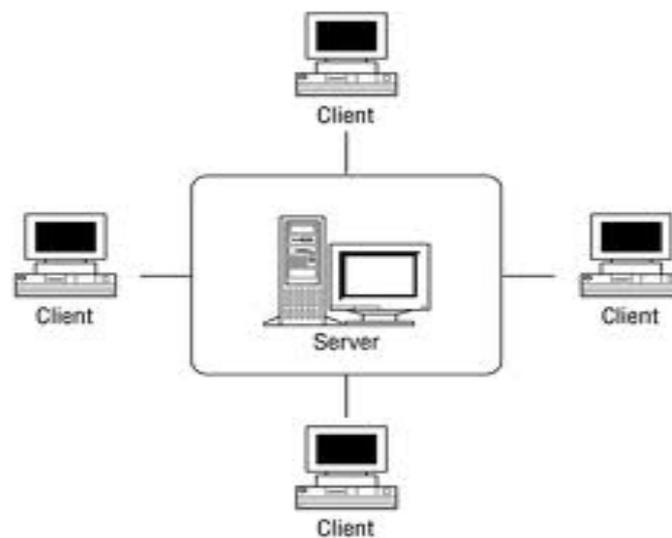
Source: <https://www.c-sharpcorner.com/UploadFile/65fc13/types-of-database-management-systems/>

The Approval of the network data model similar with the esteem of the hierarchical data model. Some data were more naturally modeled with more than one parent per child. The network model authorized the modeling of many-to-many relationships in data.

The network model is very similar to the hierarchical model really. Actually the hierarchical model is a subset of the network model. However, instead of using a single-parent tree hierarchy, the network model uses set theory to provide a tree-like hierarchy with the exception that child tables were allowed to have more than one parent. It supports many-to-many relationships.

c) **Relational Databases:** *In relational databases, the relationship between data files is relational. Hierarchical and network databases require the user to pass a hierarchy in order to access needed data. These databases connect to the data in different files by using common data numbers or a key field. Data in relational databases is stored in different access control tables, each having a key field that mainly identifies each row. In the relational databases are more reliable than either the hierarchical or network database structures. In relational databases, tables or files filled up with data are called relations (tuples) designates a row or record, and columns are referred to as attributes or fields.*

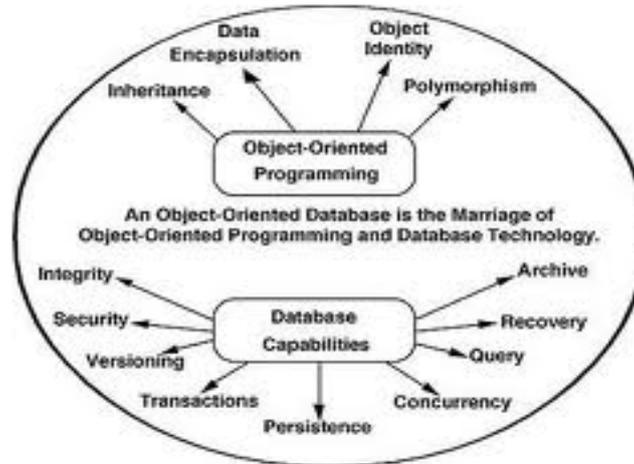
Relational databases work on each table has a key field that uniquely indicates each row, and that these key fields can be used to connect one table of data to another.



Source: <https://www.c-sharpcorner.com/UploadFile/65fc13/types-of-database-management-systems/>

d) **Object-Oriented databases:** In this Model we have to discuss the functionality of the object oriented Programming .It takes more than storage of programming language objects. Object DBMS's increase the semantics of the C++ and Java .It provides full-featured database programming capability, while containing native language compatibility. It adds the database functionality to object programming languages. This approach is the analogical of the application and database development into a constant data model and language environment. Applications require less code, use more natural data modeling, and code bases are easier to maintain. Object developers can write complete database applications with a decent amount of additional effort.

The object-oriented database derivation is the integrity of object-oriented programming language systems and consistent systems. The power of the object-oriented databases comes from the cyclical treatment of both consistent data, as found in databases, and transient data, as found in executing programs.



Source: <https://www.c-sharpcorner.com/UploadFile/65fc13/types-of-database-management-systems/>

Object-oriented databases use small, recyclable separated of software called objects. The objects themselves are stored in the object-oriented database. Each object contains of two elements:

- a) Piece of data (e.g., sound, video, text, or graphics).
- b) Instructions, or software programs called methods, for what to do with the data.

Valuing Databases

Valuing databases is something Intangible Business does for a number of purposes, including for management, sale, due diligence and for disputes. Our approach to valuing databases follows accepted industry database valuation standards. Each database valuation approach requires an in-depth understanding of the issues involved in valuing a database. Such issues include:

- Size, quality and content of the database
- Segmentation of data and value to customers, whether brokers or end users
- Database accuracy, decay rates, verification process and costs of maintenance
- Ease of operation and dependence on people, reputation or brand name
- Market dynamics, positioning and reputation within the specific industry

As each database, and the business model to which it is applied, is unique, Intangible Business tailors its valuation approach for each database, providing a bespoke database valuation each time. The three main approaches to valuing a database are:

Income approach to valuing databases : analysing income by product/customer and market segment, appreciating the relative strength of the database against benchmarked competitors. These future cash flows are then converted to a single present amount.

Cost approach to valuing databases : the cost approach to valuing databases is likely to be relevant as the cost, time and risks involved in building a comparable database are a relevant reference point in most circumstances. This is generally an important component of database valuations.

Market approach to valuation databases : the market approach to valuing databases is based on research on comparable transactions in the public domain, either for standalone businesses or licensing deals.

Formulae

The concept of formulae in business context by discussing the forms of pharmaceutical patents in India as pharmaceutical industry uses several formulae to produce various pharmaceutical products.

The Pharma industry is one of the most intense “knowledge driven” sectors. Pharmaceutical research is very costly and unpredictable in nature. Outcome of the research can be in the form of a new, inventive and useful product or process. In this highly competitive market, it is imperative for the pharmaceutical companies to protect their inventions from any unauthorized commercial use by acquiring patent rights over the invented product or process. Pharmaceutical patents in India can be classified under following categories. This classification is based on the list of Pharma patents provided by the Indian patent office on its website.

a) **Drug compound patents**

These patents claim a drug compound by its chemical structure per se. These patent claims are usually referred as Markush type claims. A Markush claim is a claim with multiple “functionally equivalent” chemical entities allowed in one or more parts of the drug compound.

Drug compound patents provide the broadest possible protection to the company’s product, since other companies are not allowed to prepare such drug by any route of synthesis or produce/ sell any formulation comprising this drug before the expiry of said patent.

b) **Formulation/ composition Patents**

These patents claim a specific technology to prepare a formulation and/or quantity of its key ingredients. For example, following ayurvedic anti-retroviral composition for treatment of Acquired Immuno Deficiency Syndrome was claimed in the Indian patent no. 203986 [9].

“Guduchi or Giloe (cordifolium): 5 mg-2 gm Panash or Kathal (jack fruit): 2 mg-5 gm Tulsi or Krishna Tulsi (Holy Basil): 5 mg-5 gm Kuda or Kutaja (Kurchi): 2 mg-2 gm Bhui Amla or Bahu Patra (Gooseberry): 5 mg-2 gm, in combination with pharmaceutical acceptable excipients.”

c) **Synergistic combination Patents**

Drug synergy occurs when two or more drugs interact with each other in such a way that it enhances or magnifies one or more effects of those drugs. Patents can be obtained on new synergistic combinations of the drugs.

For example, a synergistic combination of roflumilast and salmeterol was claimed in the Indian patent no. 206328 [10] as follows:

“A medicament comprising a PDE inhibitor, which is to be administered orally, from the PDE4 inhibitors group combined with a G2 adrenoceptor agonist in fixed or free combination, wherein the PDE inhibitor is roflumilast, a pharmacologically tolerable salt of roflumilast and/or the N-oxide of roflumilast and the G2 adrenoceptor agonist is salmeterol or a pharmacologically tolerable salt thereof”.

d) **Technology Patents**

These patents are based on the techniques used to solve specific technology related problems like stabilization, taste masking, increase in the solubility etc.

For example, following taste masked formulation was claimed in the Indian patent no. 227933[11].

“A pharmaceutical formulation having a masked taste, the masking of which persists during administration of the formulation, in particular in the form of a suspension in an aqueous vehicle, characterized in that it comprises at least the following elements: a) a cellulosic polymer which is soluble in organic solvents but practically insoluble in water, regardless of the pH; a methacrylic polymer which is soluble in an acid medium and practically insoluble at a neutral or alkaline pH and an active ingredient distributed in

a homogeneous manner and in the molecular state in the mixture, which is in the form of an atomized matrix; b) an alkaline agent of an organic nature or an alkaline salt, which is pharmaceutically acceptable; c) an adsorbent agent.”

e) **Polymorph Patents**

Polymorphs are different physical forms or crystal structure of an already known compound. Polymorphs are usually prepared to reduce impurities or increase stability of the compounds.

For example, Indian patent no. 237261 claims the crystalline form B4 of atorvastatin magnesium characterized by X-ray powder diffraction pattern [12]. Said crystalline form shows purity greater than 98%.

f) **Biotechnology patents**

Biotechnology involves the use of living organisms or biological materials in the preparation of pharmaceutical products. Biotechnology patents cover a wide range of diagnostic, therapeutic and immunological products.

For example, Indian patent no. 234072 claims an aqueous, human serum albumin-free Interferon solution containing an interferon-alpha, a non-ionic detergent, a buffer for adjusting pH 4.5-5.5, benzyl alcohol and optionally an isotonicizing agent [14].

Incidentally, above Indian patent no. 234072 was the first product patent granted by the Indian Patent office after the enactment of product patent regime in 2005. The patent is owned by F. Hoffmann-La Roche Ltd., Switzerland.

g) **Process patents**

A process patent does not claim the product per se, rather it only covers a new and inventive process to produce a particular product.

For example, Indian patent no. 206678 claims a process to synthesize L-lactone of formula 3,6- dialkyl-5,6-dihydro-4-hydroxy-2h-pyran-2-one[15].

Designs

Designer is a general term for a person who makes designs for objects. In usage the term is requires specific context, for example a fashion designer designs clothing, a web designer designs web pages, and an automobile designer designs automobiles.

Design thinking is a process used by designers for solving complex problems with creative solutions. It serves as a recipe for whipping up a batch of creativity whenever you are hungry for some fresh ideas. Designers use this process to streamline their ideas and create innovative solutions.

Businesses recognise that good design can have a powerful impact on competitive advantage and profitability. It can differentiate products and services and enhance their value – while poor design can threaten the survival of an organisation. It has been argued that good design can improve communication and integration throughout the organisation, help to reduce complexity and cost, and enhance brand value. It can also help companies to balance the needs of managers and shareholders with the cost, value and quality requirements of customers. However, good design rarely just happens, but stems from an effective development process. In the 1997 House of Lords debate on design, Lord Currie emphasised that design is a multi-skilled, multidisciplinary function.

‘Design involves not just designers and not just those working for design consultancies but also engineers, scientists and all those including senior management and – dare I mention it? – finance directors and accountants who contribute and influence the process of innovation and new product development (Lord Currie, House of Lords, 1997).’

There is growing recognition of the importance of people outside the formal design process in influencing the nature and form of new products. Nixon et al (1997) acknowledged the role of ‘silent designers’ – including specialists from R&D, production, marketing and accounting, who can influence the nature and form of new products. These silent designers provide ‘essential information and strategic links in managing design parameters.’ Research has also shown that most of a product’s life cycle cost is ‘locked in’ at the early design stage, and that any changes to the product after this point incur very high costs. If this is the case, then to ensure that products are produced at lowest cost, accountants need to set parameters and become involved at the early stage in the product development process.

The purpose of this study was to explore how management accounting can facilitate product development and effective design in order to enhance brand value. It focused on the small business sector, where companies may not have the resources to investigate design potential in the same way as large organisations do, but can still benefit from a strong design input.

Significance of Design- Comprehending through LOGO

Entrepreneurs must master communication skills. We can’t read one another’s minds, so **images and words are the only way to tell people about your offering and create the desire that transforms strangers into customers.** Your website, advertising, product packaging, logo and brand identity are the chief means of establishing an image in the minds of customers, and these are the only tools you have to create value in the mind.

But the modern landscape is crowded with communications. To develop your customer base — to be heard through the noise — **your message must be clear and distinct.** As you build your business, your ability to communicate will create the primary motivation for customers to engage with your offering, so understanding how to develop compelling, unique communications has become the best way to differentiate your business from the competition.

This process usually begins with a logo. A well-designed logo is a distillation of everything a company represents. It visually describes the offering — the vision, the personality and the purpose of your brand. A great logo can become as identifiable as a flag or a road sign. It can associate your offerings with price or quality or status or a particular emotion. **When done well, a logo can elevate a brand, giving fans a symbol to rally behind.**

Nike, Twitter and the Olympic Games have created instantly recognizable icons that mean the same thing in any language. Corporate logos convey personality, value and some idea of the company’s primary offering. Twitter’s blue bird “tweets” — a reference to the short messages that form the core feature of the communications platform. The Olympic rings graphically represent the five continents using colours that are found in the flag of every nation. Nike’s “swoosh” conveys a sense of speed, references the golden sandals of the winged goddess of victory, and resembles a stylized piece of footwear. These simple devices encapsulate emotions and meanings into an easily recognizable shape. When done correctly, a logo can transmit paragraphs of information in a half-second glance.

Softwares

Computer software, or simply software, is a collection of data or computer instructions that tell the computer how to work, in contrast to the physical hardware from which the system is built, that actually performs the work.

There are two main types of software: systems software and application software. Systems software includes the programs that are dedicated to managing the computer itself, such as the operating system, file management utilities, and disk operating system (or DOS).

Software Patent

A software patent is a patent that is provided to enhance computer performance by means of a computer application. There is no legal or conclusive definition for a software patent.

Although similar in approach, the copyrighting and patenting of software protect different IP aspects. Copyright protection is only provided to expressions and exempt to ideas, procedures or operational/computing methods, whereas patents may cover ideas, procedures and operational methods. However, a software patent's cost and enforcement may be higher, depending on the complexity of the patent's requirements. Again, like other patent categories, software patents also need to be applied according to country or region.

Some concerns for a software patent are:

1. A software patent may involve the protection of abstract ideas that may have commercial value. The legal boundaries used to define an abstract idea are not well defined and may differ according to region and law.
2. Allowing the patenting of software may lead to reduced innovation in the technology world, as there may be dependencies and interdependencies for different software and discourage the same. Determining these is easy, even for software application developers or designers.
3. Patentable and non-patentable software does not have a globally recognized separation.
4. There may be legal and technical complications related to understanding software innovation and associated technical requirements.

Process

A process patent is a form of utility patent that covers methods of changing the functionality or characteristics of a material during a particular use.

In United States of America, Processes are patentable under the U.S. Patent Act if they meet certain criteria. A process patent is a form of utility patent that covers methods of changing the functionality or characteristics of a material during a particular use. The patent-holder is granted exclusive protections and rights to that process for 20 years.

When one patents a business method or, in some cases, a computer program, this is a form of patenting a process. It's now possible to patent subscription-based services, targeted advertising networks, online auction sites, portal sites, email systems, and even discussion forums.

As our society has evolved, intellectual property (IP) issues have evolved along with it. What constitutes IP these days is so much more than the newest machine or physical invention. Today we have genetically modified seeds, new strands of DNA, computer software, chemical formulae, and more. As these issues become more complex, patent law has to evolve to address new concerns. For example, one can now patent business models and software through the U.S. Patent and Trademark Office (USPTO).

Which Business Methods can be Patented?- The US Angle

Not every business method or process is patentable. In fact, there are strict limitations and classes of business methods that can be patented under the USPTO. Of these, the most common is financial data processing (class 705). This class covers computer processes that involve business practices, finance, price determination, or management. Other classifications of eligible business model processes include gaming, education, and agriculture (classes 273, 434 and 47, respectively).

Generally speaking, the USPTO differentiates between a business model and a business method. That is, there is a legal line between your strategy or vision and your actual means of doing business. To be patentable, just like any invention, the art, method, or process must be useful, novel, and non-obvious. Disclosure has to be complete to the point that anyone with general knowledge of the industry can comprehend how it works.

These qualifications are outlined in Section 101 of the U.S. Patent Act. They carry three exceptions. One cannot patent laws of nature, abstract ideas or physical phenomena. Likewise, printed matter cannot be patented; it is

instead protected by copyright laws. In addition, the Supreme Court has generally taken the stance that patent law interpretations will be based on common and ordinary language usage.

Patenting of Manufacturing Method

Traditionally, a new manufacturing method was either patented or kept a trade secret. Many manufacturers choose to forego patenting manufacturing processes, but if a competitor then patents the same process, the manufacturer may be liable for infringement.

However, patenting a manufacturing process may involve substantial investment and may consume lot of time in obtaining the patent. In addition, a manufacturing method often can be difficult to identify. The finished article may look the same, even though it is manufactured using different processes.

Because of such difficulties, many companies keep manufacturing methods as trade secrets. Trade secret law does provide some limited protection; a person who acquires a trade secret may be liable for damages, if he/she knows or has reason to know that the trade secret was acquired by improper means. For liability to apply, the secret has to be a valid trade secret. The court will look to many factors in identifying a valid trade secret, including whether the secret was known to outside businesses; known to employees; what measures were taken to protect the secret; the value of information; the effort taken to develop information; and the ease of acquisition by others. If the court finds that a valid trade secret exists, the liable company must have knowingly acquired the trade secret. If the company finds out the secret from a third party, by no fault of their own, the company that acquired the secret may avoid liability.

Finally, the secret must be acquired with knowledge or reason to know that the secret was acquired by improper means; it could arise out a breach of a duty or an illegality. The duty may be a contractual duty, such as a confidentiality agreement, or a fiduciary duty, such as through an employment relationship. Alternatively, liability could be found if the secret is discovered through theft, bribery, or misrepresentation. It is important to note that simply reverse-engineering the product is not necessarily improper means, as it is not always possible to keep something a trade secret. If the product is publically available, reverse-engineering the product can reveal the secret without using any improper means.

ARTISTIC RELATED

Royalties from Artistic Works

Artist royalty rights schemes exist in various forms in many countries. In broad terms, these schemes give visual artists the right to receive a royalty whenever their work is resold on the commercial art market.

The concept originated in France in 1920 under the name *droit de suite*, supposedly as a result of concern over the financial plight of the widow of the impressionist painter Millet. The general impetus behind the schemes lies in the perceived disparity between the relative poverty of many artists and the wealth of many collectors and market intermediaries. This disparity is said to arise because, unlike creators such as musicians or writers, the artist's reward from an artwork is generally limited to their first sale. This sale is often at a relatively low price, as it may occur at a time before the artist's reputation is made and their talent recognized. So, for example, whereas the late Clifford Possum Tjapaltjarri's painting Warlugulong fetched A\$2.4 million in 2007, the artist's only reward was the \$1,200 he received for the picture when he initially sold it thirty years before.

The right to royalties is intended to help correct this imbalance by giving artists a continuing and inalienable stake in the prices received from subsequent sales of their work. Particularly in Europe, the royalty is also seen as an expression of the artist's "moral rights" in the created product. On this view, a royalty on later resales simply reflects the increased value that was always inherent in the work. As this is said to be attributable to the artist's act of creation, in conjunction with their later body of work and their efforts in establishing their reputation, it is argued that the artist should have the right to participate in the proceeds of those sales.

Royalties on Books

When a book publisher contracts with an author to publish a book, in essence, the author (who is the copyright holder) grants the publisher the right to publish the work for an agreed-upon amount of money. This money is called a royalty and is expressed as a percentage of sales. (The convention at most trade book publishers are to pay a royalty on the list price of a book.)

Like points related to the book delivery and rights assignments, the royalty rates are outlined in the book contract. Book publishers have standardized rates for royalties for various editions of the work (ex. hardcover, paperback, etc.)

The computation of royalty on book can be understood with the help of the following example.

If the book *Brutus, My Beloved Schnauzer* has a list price of \$10 and the royalty rate for bookstore sales is 10 percent, then the author earns \$1 for every book sold in a bookstore.

Note that this is a greatly simplified example. Any traditionally-published author will be earning different royalty rates for different types of book sales and subsidiary rights sales so the numbers won't be nearly as tidy as the ones above.

Key terminologies pertaining to royalty on book

i) **Advance Against Royalties**

What publishers and authors typically refer to as a “book advance” is an “advance against royalties.”

Most traditional publishers will give the author an advance against royalties. That is, they “advance” the author an amount of money based on what they think the book will earn.

The amount of the advance against royalties is based on many factors: the size of the publisher, the historical performance of similar books in the marketplace; the author's track record and author platform or both; and the topicality of the book.

The amount of a book advance can range from a thousand dollars for a new author at a small publisher to a tens of millions of dollars for a blockbuster New York Times best-selling author with a huge fan base.

The advance is usually paid in installments at certain points in the book development process — for example “on [contract] signing,” “on manuscript delivery,” “on manuscript acceptance” — again; this is outlined in the various clauses of the book contract.

ii) **“Earning Out” A Book Advance**

A book is said to have “earned out” its advance when the author royalties from its sales surpass the advance that the publisher paid the author.

For example, if the author *Brutus, My Beloved Schnauzer* gets an advance of \$5,000, and he is earning royalties at a rate of \$1 per book, he needs to sell 5,000 copies of the book before the book is said to have “earned out.”

Note that, since publishing industry convention dictates that books are returnable (unless the type of sale deems them otherwise), publishers take a small “reserve” percentage; that is, allowances for returned books.

(The risk of a large number of book returns is more common when the book is new — most of what doesn't get sold within a short amount of time goes back to the publisher.)

iii) **Royalty Payments and Checks**

After a book earns out, the author receives royalty checks on a regular basis as long as the book is in

print and still selling. Royalty checks are sent by the publisher on a regular, periodic schedule (usually twice a year). For authors who have literary agents representing them, the checks go through the agents, who send their checks to the author—royalties minus the agent's percentage. The day the royalty check comes is a happy, happy day in an author's life.

Whether directly from the publisher or through the literary agent, royalty checks should always be accompanied by a royalty statement, which outlines exactly the amount of books that were sold in each category.

Industry convention also dictates that, if a book under-performs, the author does not have to pay back the unearned portion of the royalty.

Royalties on Plays

In general, professional theaters pay at least \$75 per performance of a full-length play or musical, and at most 8-12% of actual box office revenue. The up-front royalty guarantee is most regularly between \$75 per performance and \$250 per performance.

Understanding Royalty from Plays- The Case of 'The National Theatre, The RSC and the Royal Court (TNC)

In the old days, getting a play on wasn't easy, but it was simple. You'd send a play off to a theatre, and, if they read it, they might decide to put it on. The production would be cast, designed and marketed largely without your input. If the director felt like it, you might attend the read-through and a late run, to check on what changes had been made in your play. After it opened you'd get some money, in the form of a percentage of the box office. In the 1970s and 1980s, all that changed. In collaboration with the Writers' Guild, a new Theatre Writers' Union negotiated binding, minimum terms agreements with, first, the National Theatre, the Royal Shakespeare Company and the Royal Court. Then agreements were negotiated with the rest of the building based sector, and finally with independent, non-building based companies.

These agreements gave playwrights an up-front commission fee (or an option fee if the play wasn't commissioned) as well as a royalty. It guaranteed the playwright the right to approve or prevent any changes in their play, to be consulted over the choice of directors and actors, as well as over casting and marketing, and to attend rehearsals. Despite dire warnings by theatres, these changes didn't lead to a drop in the number of new plays being presented, but, over time, the reverse.

The first agreement to be negotiated between playwrights and managements was with the National Theatre, the RSC and the Royal Court, organised as the Theatres National Committee (TNC), and signed in 1979. The Theatres National Committee no longer exists as an entity, but the acronym TNC is used for convenience to describe this agreement.

The agreement was substantially revised twice, in 1993 and 2007. The first agreement established the basic principles of all playwrights' agreements:

- a) Writers are paid an upfront fee as well as a percentage royalty.
- b) Writers of non-commissioned plays are paid the same as writers of commissioned plays.
- c) Management participation in a writer's future earnings is limited by a threshold.
- d) Playwrights enjoy a 'bill of rights', including the right to be consulted about personnel, to maintain the play's textual integrity, to attend rehearsals (and to be paid for so doing), and to be consulted over publicity.

The 2007 agreement made some substantial revisions. The main gains for writers were:

- a) The total up-front fee for a play was increased from £8,467 to £10,000, in all RSC, NT and RC spaces except for the Theatre Upstairs. Following cost of living increases, that total in 2012 is £11,500.

- b) Loopholes were removed in the rehearsal payment system, ensuring that playwrights are paid not just for attending rehearsals, but for attending workshops and readings, and undertaking other production-related tasks.
- c) For the first time, the reimbursement of writers' hotel and accommodation expenses was guaranteed, both during rehearsals and during workshops, auditions and research.
- d) Writers were guaranteed control over the use of clips of their shows in publicity and on theatre websites.

Royalties from Films

Films and television shows, just like songs, are creative works that are protected by copyright. As such, the owners of film copyrights are entitled to royalties when their products are used.

In film and television, the copyright owners are typically the producers. The directors, performers, writers and other key creatives involved in the work's production usually sign contracts relinquishing copyrights and stipulating royalty terms. Hollywood has a long history of power struggles between creatives, resulting in the varying royalty rates seen in their contracts. Performers (actors and actresses) typically command the highest rates, collecting approximately \$639 million in royalties in 2012.

Royalties, in film and television, go by the name 'residuals' and are paid when a film or program is rebroadcast. Creatives are typically paid a large upfront fee for a film's theatrical release or a television show's first airing and are then paid residuals for any subsequent airing, including DVD release, broadcast TV syndication and new media use such as Netflix streaming.

The valuation of residuals takes into account the amount of time spent on the production, the type of production and the market in which the production appears (e.g. TV, DVD, new media).

Most creatives are members of unions, called guilds, which sets the terms of their members' contracts, including residual rates. Major guilds include Writers Guild of America (WGA East and WGA West), Screen Actors Guild / the American Federation of Television and Radio Artists (SAG-AFTRA), Directors Guild of America (DGA), Producers Guild of America (PGA), Motion Picture Editors Guild (MPEG) and International Alliance of Theatrical Stage Employees (IATSE).

The guilds routinely lobby for higher residuals and have staged strikes during particularly contentious Hollywood power struggles to ensure that residuals continue to be paid.

The Indian Scenario

The Indian media and entertainment sector, particularly the film industry— popularly known as Bollywood, has experienced robust growth over the last few years and has become one of the fastest growing sectors of the economy despite the economic downturn.¹ In last few years, several Bollywood films have successively broken previous records on box office collections, which have perhaps also prompted both multinational entertainment companies and Indian conglomerates to invest in Bollywood films.

Traditionally, the Indian film industry has been social relationship centric, under which the arrangements/agreements were either oral or scantily documented and the disputes were usually resolved without going into arbitration or litigation. This, however, meant absence of proper chain of title documentation leading to uncertainty in the flow of rights. Only in the past few years, the Indian film industry has woken up to the need for written contracts and protection of intellectual property ("IP") rights.

The need arose because the Indian film industry witnessed a paradigm shift in its structure in the last decade. Previously, the films were funded by private money lenders, often mafia money, primarily interested in the collections from distribution rights or the box-office and ignored the residual income from the repurposing of the IP. But after it was accorded the "industry status" in 2000 by the Government of India, the following years saw the films receiving funding from the banks, and Indian corporates such as Sahara, Reliance group, Mahindra

and foreign studios such as Warner Bros., 20th Century Fox and the like. The banks, Indian corporations and foreign investors insisted on written contracts with the producers and required the producers to have watertight contracts with the cast and the crew including appropriate chain of title documentation. With the increase in commercialization opportunities, the talents that hesitated to sign even a one page contract until early 2000 started presenting detailed written contracts to preserve their commercialization rights, e.g., merchandising rights.

Debate on the Right to Claim Royalty in Relation to Underlying Works / Publishing Rights

In India, there are divergent views on the issue of claim of royalty by owners of publishing rights (i.e. rights subsisting in lyrics and musical compositions), when a sound recording is broadcast or communicated to the public. On one hand, the Madras High Court has held that owners of publishing rights should be entitled to royalty payment even if the right of sound recording has been assigned to the music or film producer. On the other hand, the Bombay High Court has held that no such payment to music composers and lyricists is required if the music composer and lyricist voluntarily transfer sound recording rights to a producer. Any public broadcast subsequent to such assignment would fall under the purview of copyright to broadcast sound recording to the public. This view has also been adopted by the Delhi High Court in as recently as July 2011. The order of the single Bombay High Court, however, has been stayed by the division bench of the said Court.

Interestingly, a proposed amendment to the Copyright Act intends to make provision for award of royalty to music composers and lyricists even after sound recording rights have been assigned to the third party. Such an amendment will bring much needed clarity on this issue. However, if the proposed amendment does not find favour with the legislators, it would be up to the Supreme Court to settle the position of law.

A Caselet on Film Distribution Rights – Mukta Arts Limited



MUKTA ARTS LIMITED

In January 2011, Mukta Arts, promoted by Subash Ghai acquired the rights to distribute six English films releasing in four months following January. The movies included “Sanctum” coming from James Cameron’s production house and 2 3D movies, all of which were to be released simultaneously across the globe. Mukta Movies Distributors, the distribution and exhibition wing of Mukta Arts had acquired the rights to distribute the movies in Western Maharashtra, including Mumbai city, Gujrat, Goa, a part of Karnataka, Delhi, U.P., Punjab, Himachal Pradesh, Haryana and a few territories in J&K. At that time,

Mukta Arts was also in talks to distribute 10 more movies releasing before the end of 2011.

SUMMARY

Intangible assets are knowledge-based assets. They intellectual properties and hence are different from tangible assets. Intangible assets do not have physical substance. Examples of intangible assets are:

- i) Brands
- ii) Patents
- iii) Trademarks
- iv) Designs
- v) Copyrights
- vi) Technical knowhow
- vii) Software

- viii) Formulations
- ix) Franchises
- x) Goodwill

Trademark

A trademark, trade mark, or trade-mark is a recognizable sign, design, or expression which identifies products or services of a particular source from those of others, although trademarks used to identify services are usually called service marks.

Certification Marks

India has a comprehensive system of product certifications governed by laws made by the Parliament of India at various times. These certifications are managed by various agencies, and hold various statuses before the law. Some of these marks are mandatory for such products to be manufactured or to be placed in the Indian market while some of the marks hold only an advisory status. All the industrial standardization and industrial product certifications are governed by the Bureau of Indian Standards, the national standards organization of India, while standards for other areas (like agricultural products) are developed and managed by other governmental agencies.

Domain Name

A domain name is your website name. A domain name is the address where Internet users can access your website. A domain name is used for finding and identifying computers on the Internet. Computers use IP addresses, which are a series of number. However, it is difficult for humans to remember strings of numbers. Because of this, domain names were developed and used to identify entities on the Internet rather than using IP addresses.

Licensing Agreements

A **licensing** agreement is a written agreement by which the owner of a property or activity gives another party permission to use that property under specified terms and conditions.

A business arrangement in which one company gives another company permission to manufacture its product for a specified payment. There are few faster or more profitable ways to grow your business than by licensing patents, trademarks, copyrights, designs, and other intellectual property to others.

Patent Licensing

Patent licensing is part of how to patent an idea and is a revocable agreement between a patent owner and a licensee to transfer interest in a patent to a licensee, who can benefit from and enforce the intellectual property rights. During this time, the licensee can make or sell the invention or design.

Franchise Agreements

A Franchise Agreement is a legal, binding contract between a franchisor and franchisee.

Franchise terms may be as short as one year, or at the other end of the scale may be granted in perpetuity. Generally however, most franchises are granted for three or five year terms with an option to renew for a corresponding period.

Databases

A database is a collection of information that is organized so that it can be easily accessed, managed and

updated. Databases process workloads to create and update themselves, querying the data they contain and running applications against it.

A database system is referred to as self-describing because it not only contains the database itself, but also metadata which defines and describes the data and relationships between tables in the database. This information is used by the DBMS software or database users if needed.

Designs

Designer is a general term for a person who makes designs for objects. In usage the term is requires specific context, for example a fashion designer designs clothing, a web designer designs web pages, and an automobile designer designs automobiles.

Design thinking is a process used by designers for solving complex problems with creative solutions. It serves as a recipe for whipping up a batch of creativity whenever you are hungry for some fresh ideas. Designers use this process to streamline their ideas and create innovative solutions.

Process

A process patent is a form of utility patent that covers methods of changing the functionality or characteristics of a material during a particular use.

Royalties from Artistic Works

Artist royalty rights schemes exist in various forms in many countries. In broad terms, these schemes give visual artists the right to receive a royalty whenever their work is resold on the commercial art market.

SELF TEST QUESTIONS

- Q1. Elucidate the usage of trademark.
- Q2. What do you understand by Internet Domains?
- Q3. What is a Top Level Domain?
- Q4. What are the various methods of valuing goodwill?
- Q5. Explain Servicing Contract.

LIST OF FURTHER READINGS

- 1) Asset Class: Securities or Financial Assets (Study Material for Educational Course)
- 2) Valuing Intangible Assets by Robert F. Reily and Robert P.Schweihs, published by McGraw Hill.
- 3) Valuation of Intellectual Property and Intangible Assets by Gordon V.Smith, published by Cumulative Supplement.

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Lesson 9

Accounting for Share Based Payments (Ind AS 102)

LESSON OUTLINE

- Introduction
- Objective, Scope and Recognition.
- Equity-settled share-based payment transactions.
- Transactions in which services are received.
- Difficulties in evaluating the fair value of the equity instruments.
- SUMMARY
- SELF TEST QUESTIONS

LEARNING OBJECTIVES

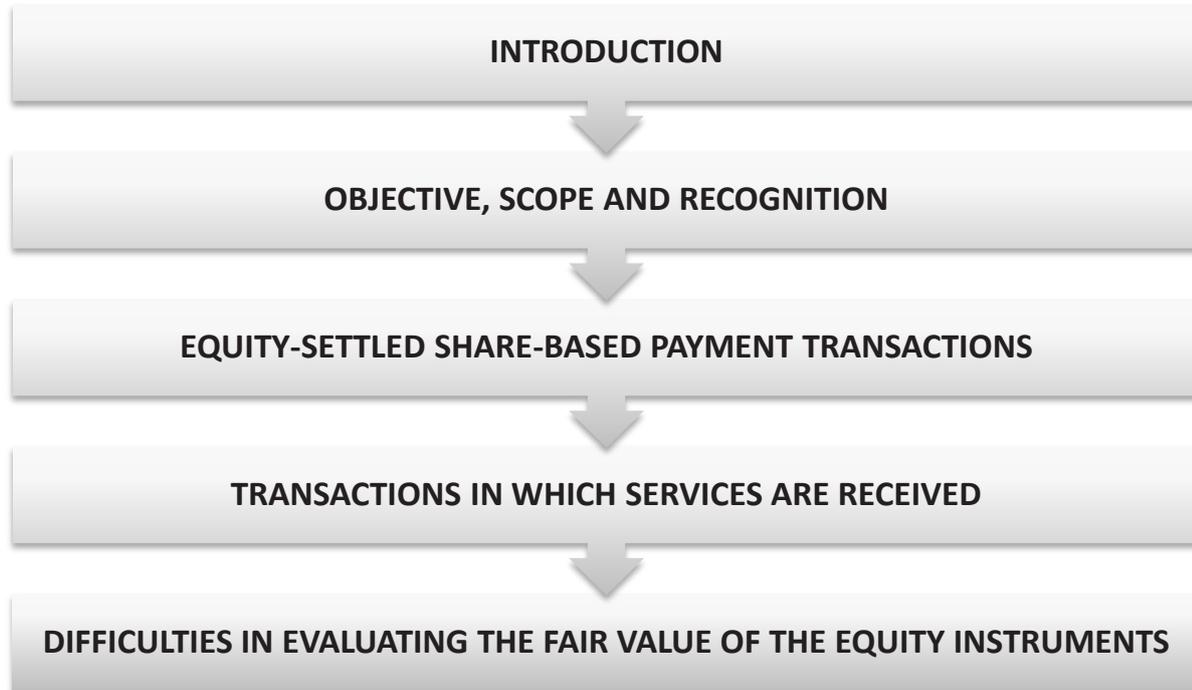
Now a day it is being increasingly observed that in order to acquire goods and services from third parties entities are issuing shares or granting share options rather than making payments in cash. Before an accounting standard was issued on the subject, there was substantial scope for different accounting treatments for such transactions, making comparability between entities extremely difficult.

Thus, this lesson by focusing upon crucial facets of accounting for share based payments, that is, Equity-Settled Share-Based Payment Transactions; Transactions in which services are received and Difficulties faced in evaluating the fair value of the equity instruments aims to impart a holistic knowledge on the topic.

ORIENTATION

This study lesson requires working level knowledge. Its in-depth understanding will assist in comprehending critical facets pertaining to share based payments, like, equity-settled share-based payment transactions, transactions in which services are received, difficulty in assessing the fair value of the equity instruments etc.

FAMILY TREE OF CONCEPTS



INTRODUCTION

Indian Accounting Standard (abbreviated as **Ind-AS**) is the Accounting standard adopted by companies in India and issued under the supervision of Accounting Standards Board (ASB) which was constituted as a body in the year 1977.

ASB is a committee under Institute of Chartered Accountants of India (ICAI) which consists of representatives from government department, academicians, other professional bodies viz. ICAI, representatives from ASSOCHAM, CII, FICCI, etc.

The Ind AS are named and numbered in the same way as the International Financial Reporting Standards (IFRS). Ind AS 102 corresponds to IFRS 2 Share-based Payments. There is no existing AS corresponding to Ind AS 102, except for a Guidance Note on this issue GN 18

National Advisory Committee on Accounting Standards (NACAS) recommend these standards to the Ministry of Corporate Affairs (MCA). MCA has to spell out the accounting standards applicable for companies in India.

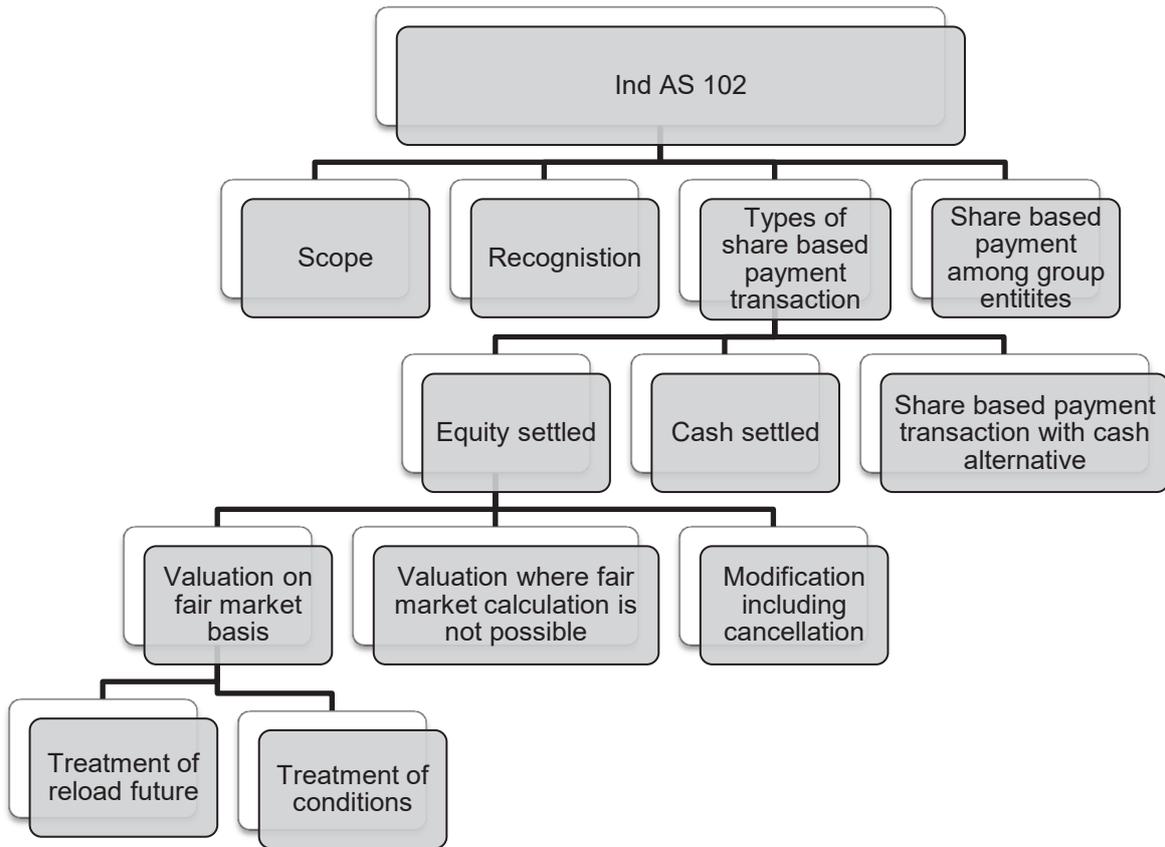
Applicability of Ind AS

Phases	Developments
Phase I	<p>Mandatorily applicability of IND AS from 1st April 2016 to all companies provided:</p> <ul style="list-style-type: none"> • It is a listed or unlisted company • Its Networth is greater than or equal to INR 500 crores <p>Net worth shall be checked for previous three Financial Years (31.03.2014, 31.03.2015 and 31.03.2016).</p>
Phase II	<p>Mandatorily applicability of IND AS from 1st April 2017 provided:</p> <ul style="list-style-type: none"> • It is a listed company or is in the process of being listed (as on 31.03.2016) • Its Networth is greater than or equal to INR 250 crores but less than INR 500 crores (on any of the above dates) <p>Net worth shall be checked for previous four Financial Years i.e. as on 31.03.2014, 31.03.2015 & 31.03.2016 & as on 31.03.2017.</p>
Phase III	<p>Mandatorily applicability of IND AS to Banks, NBFC, Insurance companies from 1st April 2018 whose:</p> <ul style="list-style-type: none"> • Networth is more than or equal to INR 500 crores with effect from 1st April, 2018 <p>IRDA shall notify the separate set of IND AS for Banks & Insurance Companies with effect from 1st April 2018. NBFC includes core investment companies, stock brokers, venture capitalists, etc. Net Worth shall be checked for 3 years i.e. 31.03.2016, 31.03.2017 & 31.03.2018</p>
Phase IV	<p>NBFC whose Net worth is more than or equal to INR 250 crores but less than 500 crores shall have mandatorily applicability of IND AS with effect from 1st April 2019.</p>

Further, it is to be noted that if IND AS becomes applicable to a company, then IND AS shall be automatically applicable to all subsidiaries, holding companies, associated companies and joint ventures irrespective of individual qualification of such companies.

In the case of foreign operations of an Indian Company, the preparation of stand-alone financial statements may continue with its jurisdictional requirements and need not be prepared as per the IND AS.

However, these entities will still have to report their IND AS adjusted numbers for their Indian parent company to prepare consolidated IND AS accounts.



IND AS-102 - Share Based Payment

- Ind AS 102 will bring much needed uniformity in valuation and accounting of share-based benefits. However, the cost for the affected companies is likely to increase significantly.
- Ind AS 102 prescribes financial reporting in respect of share-based benefits and is relevant for companies which remunerate their employees by share-based (or stock option) schemes, such as Employee Stock Options (ESOP), Share Appreciation Rights (SAR), Phantom Equity, Share Purchase Plans (SPP) etc.
- Currently, there is no accounting standard that deals specifically in the accounting of share-based benefit schemes. Guidance Note No 18 (GN 18) issued by the Institute of Chartered Accountants of India (ICAI) provides ‘guidance’ on how these schemes should be treated, but it does not have the force of an accounting standard. Consequently, many companies that run material stock option schemes do not make any disclosure or allowance in respect of these schemes.
- The Securities and Exchange Board of India (SEBI) mandates that all listed companies that run stock option schemes, should follow and make disclosures as per GN 18.
- IFRS 2 is the corresponding Accounting Standard issued by International Accounting Standards Board (IASB).
- Ind AS 102 applies to all share-based payment arrangements.
- A share-based payment arrangement is defined as:
 - An agreement between the entity (or another group entity or any shareholder of any group entity) and another party (including an employee) that entitles the other party to receive:

- cash or other assets of the entity for amounts that are based on the price (or value) of equity instruments (including shares or share options) of the entity or another group entity, or
- equity instruments (including shares or share options) of the entity or another group entity.
- An entity has to recognise share-based payment transactions in its financial statements, including transactions with employees or other parties to be settled in cash, other assets, or equity instruments of the entity. There are no exceptions to Ind AS 102, other than for transactions to which other Ind AS apply. In simple language, there are so many situations where company does not make payment in cash but in shares and hence provisions of IND AS 102 would apply.

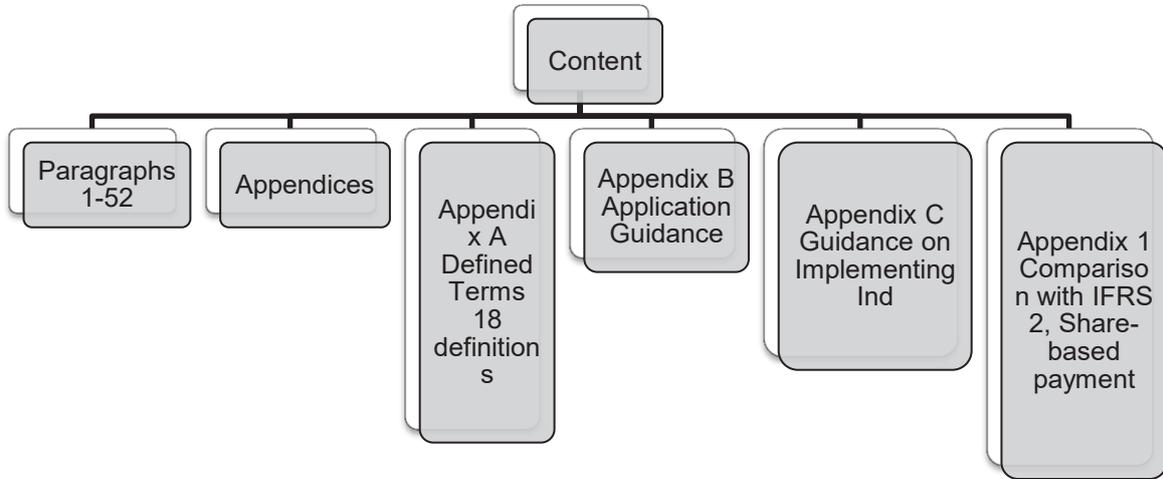
Highlights of Ind AS 102

- Ind AS 102 has broadened the scope, by covering awards made to non-employees (e.g. directors, vendors and service providers) and awards relating to shares of any group companies.
- Ind AS 102 provides for measurement of costs only under the fair value method as against the option of following either the intrinsic value method or fair value method under IGAAP (Indian Generally Accepted Accounting Principles).
- In case of graded vesting, cost is recognised under Ind AS over the grant period to reflect the options granted in each of such grant period, as against straight lining the costs over the grant period. Whilst the SBP accounting under the Ind AS 102 seems a simple concept, the practicalities are not always as easy. There could be challenges in determining the grant date, which is the trigger for the accounting of costs. Further, the determination of fair value may require use of complex valuation models, necessitating the need for a valuation expert. Therefore, there is a need to carefully analyse the accounting impact of the SBP under the Ind AS regime.

Analysis of Share based payment

1. There should be an agreement. Unless agreement is not there Ind AS-102 is not applicable. For example: A limited is planning to issue stock options to its employees. Since it is still planning and there is no formal agreement made in this respect, IND AS-102 will not be applicable.
2. The Share based payment should be made for goods or services and should be with an external person including employees. If the shares are issued because of charity IND AS 102 would not be applicable
3. The goods or services received from a party who is a shareholder is not covered in IND AS 102.
4. The company need to make the payment in equity shares of its own company or that of the group company.

Contents of Ind AS 102



Important Definitions

Some of the terms used in Ind AS 102 is as under:

Cash-settled share-based payment transaction	share-based payment transaction in which the entity acquires goods or services by incurring a liability to transfer cash or other assets to the supplier of those goods or services for amounts that are based on the price (or value) of equity instruments (including shares or share options) of the entity or another group entity.
Employees and others providing similar services	Individuals who render personal services to the entity and either (a) the individuals are regarded as employees for legal or tax purposes, (b) the individuals work for the entity under its direction in the same way as individuals who are regarded as employees for legal or tax purposes, or (c) the services rendered are similar to those rendered by employees. For example, the term encompasses all management personnel, ie those persons having authority and responsibility for planning, directing and controlling the activities of the entity, including non-executive directors.
Equity instrument	A contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities.
Equity instrument granted	The right (conditional or unconditional) to an equity instrument of the entity conferred by the entity on another party, under a share-based payment arrangement .
Equity-settled share-based payment transaction	A share-based payment transaction in which the entity (a) receives goods or services as consideration for its own equity instruments (including shares or share options), or (b) receives goods or services but has no obligation to settle the transaction with the supplier

<p>Fair value</p>	<p>The amount for which an asset could be exchanged, a liability settled, or an equity instrument granted could be exchanged, between knowledgeable, willing parties in an arm's length transaction.</p>
<p>Grant date</p>	<p>The date at which the entity and another party (including an employee) agree to a share-based payment arrangement, being when the entity and the counterparty have a shared understanding of the terms and conditions of the arrangement. At grant date the entity confers on the counterparty the right to cash, other assets, or equity instruments of the entity, provided the specified vesting conditions, if any, are met. If that agreement is subject to an approval process (for example, by shareholders), grant date is the date when that approval is obtained.</p>
<p>Intrinsic value</p>	<p>The difference between the fair value of the shares to which the counterparty has the (conditional or unconditional) right to subscribe or which it has the right to receive, and the price (if any) the counterparty is (or will be) required to pay for those shares. For example, a share option with an exercise price of Rs. 15, on a share with a fair value of Rs. 20, has an intrinsic value of Rs. 5.</p>
<p>Market condition</p>	<p>A performance condition upon which the exercise price, vesting or exercisability of an equity instrument depends that is related to the market price (or value) of the entity's equity instruments(or the equity instruments of another entity in the same group), such as:</p> <p>(a) attaining a specified share price or a specified amount of intrinsic value of a share option; or</p> <p>(b) achieving a specified target that is based on the market price (or value) of the entity's equity instruments (or the equity instruments of another entity in the same group) relative to an index of market prices of equity instruments of other entities.</p> <p>A market condition requires the counterparty to complete a specified period of service (ie a service condition); the service requirement can be explicit or implicit. (b) may start before the service period on the condition that the commencement date of the performance target is not substantially before the commencement of the service period.</p> <p>A performance target is defined by reference to:</p> <p>(a) the entity's own operations (or activities) or the operations or activities of another entity in the same group (ie a non-market condition); or</p> <p>(b) the price (or value) of the entity's equity instruments or the equity instruments of another entity in the same group (including shares and share options) (ie a market condition).</p> <p>A performance target might relate either to the/ performance of the entity as a whole or to some part of the entity (or part of the group), such as a division or an individual employee.</p>

Reload feature	A feature that provides for an automatic grant of additional share options whenever the option holder exercises previously granted options using the entity's shares, rather than cash, to satisfy the exercise price
Service condition	A vesting condition that requires the counterparty to complete a specified period of service during which services are provided to the entity. If the counterparty, regardless of the reason, ceases to provide service during the vesting period , it has failed to satisfy the condition. A service condition does not require a performance target to be met.
Share-based payment arrangement	An agreement between the entity (or another group entity or any shareholder of any group entity) and another party (including an employee) that entitles the other party to receive (a) cash or other assets of the entity for amounts that are based on the price (or value) of equity instruments (including shares or share options) of the entity or another group entity, or (b) equity instruments (including shares or share options) of the entity or another group entity, provided the specified vesting conditions , if any, are met.
Share-based payment transaction	A transaction in which the entity (a) receives goods or services from the supplier of those goods or services (including an employee) in a share-based payment arrangement , or (b) incurs an obligation to settle the transaction with the supplier in a share-based payment arrangement when another group entity receives those goods or services.
Vesting condition	A condition that determine whether the entity receives the services that entitle the counterparty to receive cash, other assets or equity instruments of the entity, under a share-based payment arrangement . A vesting condition is either a service condition or a performance condition .
Vesting period	The period during which all the specified vesting conditions of a share-based payment arrangement are to be satisfied.

OBJECTIVE, SCOPE AND RECOGNITION

The objective of this Standard is:

1. To specify the financial reporting by an entity when it undertakes a share-based payment transaction.
2. It requires an entity to show in its profit or loss and financial position what is the effects of share-based payment transactions, including expenses.

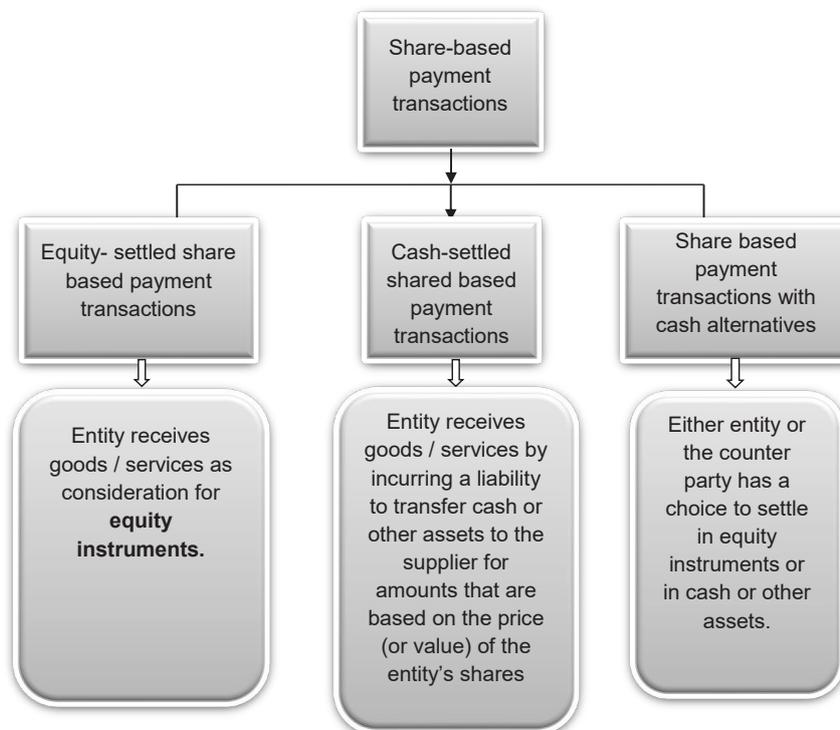
To summarise, the objective of this Accounting standard is to recognise share-based payment transactions in its financial statements.

Scope

1. This standard is applicable for all share-based payment transactions
2. All share-based payment transactions **even if entity can't identify specifically some or all services received, including**
 - Equity settled share-based payment transactions
 - Cash settled share-based payment transactions
 - As per terms of arrangement of receiving goods or services, the entity or supplier can settle transaction in cash or equity shares

Examples

- i) Share options
 - ii) Share based payments with cash alternatives
 - iii) Share appreciation rights
 - iv) Restricted shares
3. Ind AS 102 covers share-based payment arrangements, not merely share-based payment transactions
 A share-based payment arrangement is “an agreement between the entity (or another group entity as defined in Ind AS 110 or any shareholder of any group entity) and another party (includes an employee) that entitles the other party to receive.
 4. Ind AS 102 thus applies to share-based payment transaction settled by another group entity



Source : www.caaa.in

Brain Capsule 1

Which of the following is not covered in Ind AS 102?

1. 100 shares to employee of A limited who will remain in service for 3 years- covered
2. X limited grants Rs. 50,000 to each employee based on its current equity price – Not Covered
3. ABC Limited received services from a party who is acting as shareholder- Not covered

Covered Transactions	Not Covered Transactions
Transaction settled in equity	The goods or services received from a party who is a shareholder
Cash settled share-based payment transactions	For Transactions where goods are received as a part of business combination
Arrangement of receiving goods or services, the entity or supplier can settle transaction in cash or equity shares	
Share-based payment arrangements	
Issue of equity shares by the company or of its group company	
Employees working as a service provider and receiving share based payments	

Recognition

Unless a transaction is not recognised there would be no accounting entry passed for it. The following transactions are recognised :

1. Goods or services received or acquired in a share based payment transaction are recognised only when it receives the goods or as the services. It shall also recognise a corresponding increase in equity if goods and services were acquired in a equity settled share based payment transaction and liability in case of cash settled share based payment transaction
2. When goods or services so acquired or received under share based payment transaction, do not qualify for recognition as assets, they shall be recognised as expenses.
3. An expenses arises from consumption of goods or services.

Consumption of services : immediately and hence recognised immediately

Consumption of goods : over a period of time or at a later date, so the expense is recognised when the goods are consumed

To summarise

For equity-settled share-based payment Transactions	a corresponding increase in equity is recognised
-----------------------------------------------------	--------------------------------------------------

Covered Transactions	Not Covered Transactions
Transaction settled in equity	The goods or services received from a party who is a shareholder
Cash settled share-based payment transactions	For Transactions where goods are received as a part of business combination
Arrangement of receiving goods or services, the entity or supplier can settle transaction in cash or equity shares	
Share-based payment arrangements	
Issue of equity shares by the company or of its group company	
Employees working as a service provider and receiving share based payments	
cash-settled share-based payment transactions	a corresponding liability is recognised

EQUITY-SETTLED SHARE-BASED PAYMENT TRANSACTIONS

For equity settled share based payment transactions, the entity shall measure, the goods or services received, and the corresponding increase in equity, directly at the fair value of the goods and services received. For example a company bought goods against which they are issuing 100 equity shares as payment. The fair value of these shares is Rs. 50000 than the value of these goods would be recorded with Rs. 50000.

1. If any goods or services are received by an entity, then the value shall be calculated on fair value unless fair value cannot be estimated reliably.
2. To apply the above provision, there is a presumption that the fair value of goods or services can be estimated reliably. This fair value is to be measured on the date the entity obtains the goods or the other party renders services.
3. If the above transactions are done with employees and others providing services, then the fair value of services received is to be calculated with reference to the fair value of equity instrument granted because it is very difficult to estimate the fair value of services. The fair value should be measured as at the grant date.
4. The shares, share options or other equity instruments are granted to employees as part of their remuneration package, in addition to a cash salary and other employment benefits. Usually, it is not possible to measure directly the services received for particular components of the employee's remuneration package. It might also not be possible to measure the fair value of the total remuneration package independently, without measuring directly the fair value of the equity instruments granted. Furthermore, shares or share options are sometimes granted as part of a bonus arrangement, rather than as a part of basic remuneration, e.g. as an incentive to the employees to remain in the entity's employment or to reward them for their efforts in improving the entity's performance. By granting shares or share options, in addition to other remuneration, the entity is paying additional remuneration to obtain additional benefits. Estimating the fair value of those additional benefits is likely to be difficult. Because of the difficulty of measuring directly the fair value of the services received, the entity shall measure the fair value of the employee services received by reference to the fair value of the equity instruments granted.

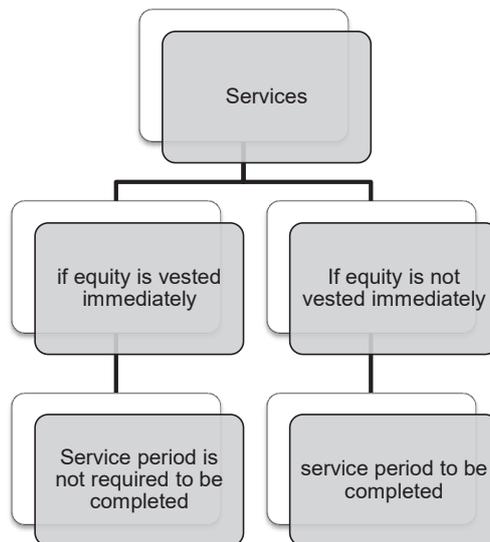
5. If identified consideration received, if any by the entity appears to be less than the fair value of equity instrument granted or liability incurred than this indicates presence of other consideration i.e. unidentified goods or services has been received by the entity. In such a case identified goods or services shall be measured as per the standard and the unidentified goods or services shall be difference between the fair value of the shares based payment and the fair value of any identifiable goods or services received.

To summarise:

- For equity settled share based payment transactions → value is determined on fair value of goods or services received
- For transaction with employees or similar service providers → Fair value of equity instrument should be taken

TRANSACTIONS IN WHICH SERVICES ARE RECEIVED

The transactions in which services are received are broadly covered under the following categories: If equity is vested immediately and if equity is not vested immediately. The ensuing diagram provide a vivid description of the transactions in which services are received.



1. If the equity instruments granted vest immediately, the counterparty is not required to complete a specified period of service before becoming unconditionally entitled to those equity instruments. In the absence of evidence to the contrary, the entity shall presume that services rendered by the counterparty as consideration for the equity instruments have been received. In this case, on grant date the entity shall recognise the services received in full, with a corresponding increase in equity.
2. If the equity instruments granted do not vest until the counterparty completes a specified period of service, the entity shall presume that the services to be rendered by the counterparty as consideration for those equity instruments will be received in the future, during the *vesting period*. The entity shall account for those services as they are rendered by the counterparty during the vesting period, with a corresponding increase in equity.

For example:

- (a) if an employee is granted share options conditional upon completing three years' service, then the entity shall presume that the services to be rendered by the employee as consideration for the share options will be received in the future, over that three-year vesting period.

- (b) if an employee is granted share options conditional upon the achievement of a *performance condition* and remaining in the entity's employment until that performance condition is satisfied, and the length of the vesting period varies depending on when that performance condition is satisfied, the entity shall presume that the services to be rendered by the employee as consideration for the share options will be received in the future, over the expected vesting period. The entity shall estimate the length of the expected vesting period at grant date, based on the most likely outcome of the performance condition. If the performance condition is a *market condition*, the estimate of the length of the expected vesting period shall be consistent with the assumptions used in estimating the fair value of the options granted, and shall not be subsequently revised. If the performance condition is not a market condition, the entity shall revise its estimate of the length of the vesting period, if necessary, if subsequent information indicates that the length of the vesting period differs from previous estimates.

For example

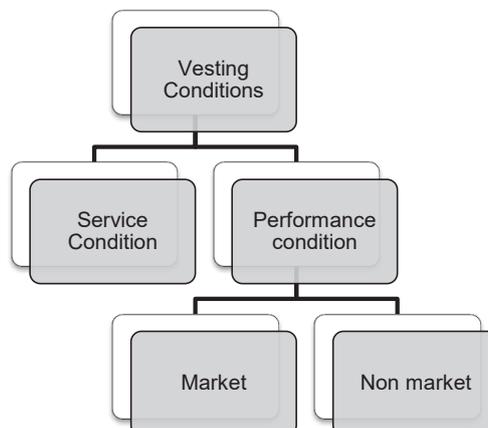
Transactions measured by reference to the fair value of the equity Instruments granted

1. Determining the fair value of equity instrument granted

- a. When a transaction is measured by means of fair value, then the following should be considered:
 - i. Fair value should be taken at the measurement date
 - ii. It should be based on market price, if available
 - iii. Other terms and conditions upon which the equity instruments were granted should also be considered while calculating fair value
- b. If market price is not available, then the fair value of equity shall be calculated as under:
 - i. Valuation technique should be used to estimate the price
 - ii. Calculation shall be done on measurement date
 - iii. Such calculation should be done at arm's length price
 - iv. The Valuation technique shall be consistent with generally accepted valuation methodologies

2. Treatment of vesting conditions

The equity instrument might be conditional upon satisfying specified vesting conditions. For example, a grant of shares or share options to an employee is typically conditional on the employee remaining in the entity's employment for a specified period of time. There might be performance conditions that must be satisfied, such as the entity achieving a specified growth in profit or a specified increase in the entity's share price.



1. **Service Condition** : Where share based payment is dependent upon the minimum term to be served in order to be eligible for share based payment.
2. **Performance condition** : Where share based payment is dependent upon the achievement of a performance condition is called as performance condition.
3. Vesting conditions, other than market conditions, shall not be taken into account when estimating the fair value of the shares or share options at the measurement date. It can be market related or non market related.
 - a. Market related means to achieve a value of share by an entity. For Example: An entity issues stock options to its employees who will serve the organization for next 3 years and till the time the share price reaches to Rs. 125. The target price to reach Rs. 125 is market related condition.
 - b. When the parameter is not market driven but linked with some internal performance/ operations or activities of the entity, it will be considered as non-market related conditions. For Example: An entity issued some stock options to employees with a condition that they have to remain in the organisation for next 2 years and EBITA of the entity should rise to INR 1 million. Here, the EBITA target is non-market related condition.

Instead, vesting conditions shall be taken into account by adjusting the number of equity instruments included in the measurement of the transaction amount so that, ultimately, the amount recognised for goods or services received as consideration for the equity instruments granted shall be based on the number of equity instruments that eventually vest.

Hence, on a cumulative basis, no amount is recognised for goods or services received if the equity instruments granted do not vest because of failure to satisfy a *vesting condition*, example the counterparty fails to complete a specified service period, or a performance condition is not satisfied.

4. To apply the above condition, the entity shall recognise an amount for the goods or services received during the vesting period based on the best available estimate of the number of equity instruments expected to vest and shall revise that estimate, if necessary, if subsequent information indicates that the number of equity instruments expected to vest differs from previous estimates. On vesting date, the entity shall revise the estimate to equal the number of equity instruments that ultimately vested.
5. Market conditions, such as a target share price upon which vesting (or exercisability) is conditioned, shall be taken into account when estimating the fair value of the equity instruments granted. Therefore, for grants of equity instruments with market conditions, the entity shall recognise the goods or services received from a counterparty who satisfies all other vesting conditions (eg services received from an employee who remains in service for the specified period of service), irrespective of whether that market condition is satisfied.

6. **Treatment of non-vesting conditions**

Not only vesting but non-vesting conditions should be also considered while estimating fair value of the equity instruments granted.

7. **Treatment of a reload feature**

A reload feature automatically grants additional stock options whenever an option holder exercises previously granted options using an entity's shares to satisfy the exercise price. New stock options granted under this feature have the same expiry date as the old options. The treatment of reload feature is as under:

- a. For options with a *reload feature*, the reload feature shall not be taken into account when estimating the fair value of options granted at the measurement date.
- b. Instead, a *reload option* shall be accounted for as a new option grant, if and when a reload option is subsequently granted.

8. After vesting date

After recognising the goods or services above and increase in equity, the entity shall make **no subsequent adjustment** to total equity after vesting date. For example, the entity shall not subsequently reverse the amount recognised for services received from an employee if the vested equity instruments are later forfeited or, in the case of share options, the options are not exercised.

DIFFICULTIES IN EVALUATING THE FAIR VALUE OF THE EQUITY INSTRUMENTS

If the fair price of the equity instrument cannot be estimated reliably, for example, in case of share options granted to employees, the credit given to an appropriate equity account, say, 'share options outstanding account' (upon receiving the services) may be transferred to another appropriate equity account, say, 'General Reserves' when the options are not exercised. In such a case the valuation would be carried out as under:

- a. Measure the equity instruments at their *intrinsic value*, initially at the date the entity obtains the goods or the counterparty renders service and subsequently at the end of each reporting period and at the date of final settlement, with any change in intrinsic value recognised in profit or loss. For the grant of share options, it is finally settled when the option is exercised, forfeited or lapsed.
- b. The goods and services are recognised on the basis of number of equity instruments that finally vest

Modifications to the terms and conditions on which equity instruments were granted, including cancellations and settlements

An entity might modify the terms and conditions on which the equity instruments were granted. For example, it might reduce the exercise price of options granted to employees (i.e. re price the options), which increases the fair value of those options.

The below mentioned provisions in respect of modifications are expressed in the context of share-based payment transactions with employees. However, the requirements shall also be applied to share-based payment transactions with parties other than employees that are measured by reference to the fair value of the equity instruments granted

1. The entity shall recognise, as a minimum, the services received measured at the grant date fair value of the equity instruments granted, unless those equity instruments do not vest because of failure to satisfy a vesting condition (other than a market condition) that was specified at grant date. This applies irrespective of any modifications to the terms and conditions on which the equity instruments were granted, or a cancellation or settlement of that grant of equity instruments. In addition, the entity shall recognise the effects of modifications that increase the total fair value of the share-based payment arrangement or are otherwise beneficial to the employee.
2. If a grant of equity instruments is cancelled or settled during the vesting period (other than a grant cancelled by forfeiture when the vesting conditions are not satisfied):
 - (a) the entity shall account for the cancellation or settlement as an acceleration of vesting, and shall therefore recognise immediately the amount that otherwise would have been recognised for services received over the remainder of the vesting period.
 - (b) any payment made to the employee on the cancellation or settlement of the grant shall be accounted for as the repurchase of an equity interest, i.e. as a deduction from equity, except to

the extent that the payment exceeds the fair value of the equity instruments granted, measured at the repurchase date. Any such excess shall be recognised as an expense. However, if the share-based payment arrangement included liability components, the entity shall re-measure the fair value of the liability at the date of cancellation or settlement. Any payment made to settle the liability component shall be accounted for as an extinguishment of the liability.

- (c) if new equity instruments are granted to the employee and, on the date when those new equity instruments are granted, the entity identifies the new equity instruments granted as replacement equity instruments for the cancelled equity instruments, the entity shall account for the granting of replacement equity instruments in the same way as a modification of the original grant of equity instruments.
- (d) The incremental fair value granted is the difference between the fair value of the replacement equity instruments and the net fair value of the cancelled equity instruments, at the date the replacement equity instruments are granted. The net fair value of the cancelled equity instruments is their fair value, immediately before the cancellation, less the amount of any payment made to the employee on cancellation of the equity instruments that is accounted for as a deduction from equity in accordance with (b) above. If the entity does not identify new equity instruments granted as replacement equity instruments for the cancelled equity instruments, the entity shall account for those new equity instruments as a new grant of equity instruments.

If an entity or counterparty can choose whether to meet a non-vesting condition, the entity shall treat the entity's or counterparty's failure to meet that non-vesting condition during the vesting period as a cancellation.

If an entity repurchases vested equity instruments, the payment made to the employee shall be accounted for as a deduction from equity, except to the extent that the payment exceeds the fair value of the equity instruments repurchased, measured at the repurchase date. Any such excess shall be recognised as an expense. When modifications decrease the fair value of the equity instruments, recognition is based on the original grant date fair value i.e., such modifications are ignored

To summarise:

When modifications increase the fair value of the equity instruments, recognition is the sum of:

- The original grant date fair value; and
- The incremental fair value
- The incremental fair value is the difference between the fair value of the modified equity instruments and the original equity instrument, both measured at the date of modification

Cancellation or settlement is accounted for as accelerated vesting. Recognise immediately the amount that otherwise would have been recognised over the remainder of the vesting Period.

Any payment made on cancellation or settlement is accounted for as a repurchase of equity instruments, except that any excess over the fair value of equity instruments at repurchase date is an expense.

Cash Settled share-based payment transactions

For cash-settled share-based payment transactions, the entity shall measure the goods or services acquired and the liability incurred at the fair value of the liability. Until the liability is settled, the entity shall remeasure the fair value of the liability at the end of each reporting period and at the date of settlement, with any changes in fair value recognised in profit or loss for the period.

For example, an entity might grant share appreciation rights to employees as part of their remuneration package, whereby the employees will become entitled to a future cash payment (rather than an equity instrument), based

on the increase in the entity's share price from a specified level over a specified period of time. Or an entity might grant to its employees a right to receive a future cash payment by granting to them a right to shares (including shares to be issued upon the exercise of share options) that are redeemable, either mandatorily (eg upon cessation of employment) or at the employee's option.

The liability shall be measured, initially and at the end of each reporting period until settled, at the fair value of the share appreciation rights, by applying an option pricing model, taking into account the terms and conditions on which the share appreciation rights were granted, and the extent to which the employees have rendered service to date.

Share-based payment transactions with cash alternatives

For share-based payment transactions in which the terms of the arrangement provide either the entity or the counterparty with the choice of whether the entity settles the transaction in cash (or other assets) or by issuing equity instruments, the entity shall account for that transaction, or the components of that transaction, as a cash settled share-based payment transaction if, and to the extent that, the entity has incurred a liability to settle in cash or other assets, or as an equity-settled share-based payment transaction if, and to the extent that, no such liability has been incurred.

In Simple words,

1. The choice to settle in cash or equity is with the entity or with the other party.
2. When the counterparty or the other party has a choice of settlement then:
 - a. It is assumed that a compound instrument is issued which has debt and equity component.
 - b. For transactions with parties other than employees, in which the fair value of the goods or services received is measured directly, the entity shall measure the equity component of the compound financial instrument as the difference between the fair value of the goods or services received and the fair value of the debt component, at the date when the goods or services are received.
 - c. For other transactions, including transactions with employees, the entity shall measure the fair value of the compound financial instrument at the measurement date, taking into account the terms and conditions on which the rights to cash or equity instruments were granted. To apply the above requirement, the entity shall first measure the fair value of the debt component, and then measure the fair value of the equity component— taking into account that the counterparty must forfeit the right to receive cash in order to receive the equity instrument. The fair value of the compound financial instrument is the sum of the fair values of the two components. However, share-based payment transactions in which the counterparty has the choice of settlement are often structured so that the fair value of one settlement alternative is the same as the other. For example, the counterparty might have the choice of receiving share options or cash settled share appreciation rights. In such cases, the fair value of the equity component is zero, and hence the fair value of the compound financial instrument is the same as the fair value of the debt component. Conversely, if the fair values of the settlement alternatives differ, the fair value of the equity component usually will be greater than zero, in which case the fair value of the compound financial instrument will be greater than the fair value of the debt component.
 - d. The entity shall account separately for the goods or services received or acquired in respect of each component of the compound financial instrument. For the debt component, the entity shall recognise the goods or services acquired, and a liability to pay for those goods or services, as the counterparty supplies goods or renders service, in accordance with the requirements applying to cash-settled share-based payment transactions. For the equity component (if any), the entity shall recognise the goods or services received, and an increase in equity, as the counterparty supplies

goods or renders service, in accordance with the requirements applying to equity-settled share-based payment transactions.

- e. At the date of settlement, the entity shall remeasure the liability to its fair value. If the entity issues equity instruments on settlement rather than paying cash, the liability shall be transferred direct to equity, as the consideration for the equity instruments issued.
- f. If the entity pays in cash on settlement rather than issuing equity instruments, that payment shall be applied to settle the liability in full. Any equity component previously recognised shall remain within equity. By electing to receive cash on settlement, the counterparty forfeited the right to receive equity instruments.

For example : An entity buys machine from a supplier and provides an option to the supplier to either take cash or equity shares equivalent to the value of the share price . The fair value of equity will be difference of fair value of goods received and fair value of cash settlement.

3. When the entity has a choice of settlement

- a. For a share-based payment transaction in which the terms of the arrangement provide an entity with the choice of whether to settle in cash or by issuing equity instruments, the entity shall determine whether it has a present obligation to settle in cash and account for the share-based payment transaction accordingly. The entity has a present obligation to settle in cash if the choice of settlement in equity instruments has no commercial substance (eg because the entity is legally prohibited from issuing shares), or the entity has a past practice or a stated policy of settling in cash, or generally settles in cash whenever the counterparty asks for cash settlement.
- b. If the entity has a present obligation to settle in cash, it shall account for the transaction in accordance with the requirements applying to cash-settled share-based payment transactions.
- c. If no such obligation exists, the entity shall account for the transaction in accordance equity-settled share-based

Share-based payment transactions among group entities

For share-based payment transactions among group entities, in its separate or individual financial statements, the entity receiving the goods or services shall gauge the goods or services received as either an equity-settled or a cash-settled share-based payment transaction by assessing:

- (a) the nature of the awards granted, and
- (b) its own rights and obligations.

The amount recognised by the entity receiving the goods or services may differ from the amount recognised by the consolidated group or by another group entity settling the share-based payment transaction.

The entity receiving the goods or services shall measure the goods or services received as an equity-settled share-based payment transaction when:

- (a) the awards granted are its own equity instruments, or
- (b) the entity has no obligation to settle the share-based payment transaction.

The entity shall subsequently remeasure such an equity-settled share-based payment transaction only for changes in non-market vesting conditions. In all other circumstances, the entity receiving the goods or services shall measure the goods or services received as a cash-settled share-based payment transaction.

The entity settling a share-based payment transaction when another entity in the group receives the goods or services shall recognise the transaction as an equity-settled share-based payment transaction only if it is settled

in the entity's own equity instruments. Otherwise, the transaction shall be recognised as a cash-settled share-based payment transaction.

Some group transactions involve repayment arrangements that require one group entity to pay another group entity for the provision of the share-based payments to the suppliers of goods or services. In such cases, the entity that receives the goods or services shall account for the share-based payment transaction in accordance with paragraph 43B regardless of intragroup repayment arrangements.

Disclosures:

Ind AS 102 prescribes various disclosure requirements to enable users of financial statements to understand:

- the nature and extent of share-based payment arrangements that existed during the period;
- how the fair value of the goods or services received, or the fair value of the equity instruments granted, during the period was determined; the effect of share-based payment transactions on the entity's profit or loss for the period and on its financial position.

Standard requires an entity to disclose the following –

- Type and scope of agreement existing during the reporting period.
- Describing general terms & conditions of each type of share-based payment plans.
- The number of weighted average price of share option as outstanding with a movement of granted, vested, expired, exercised, cancelled and closing balance of share-based payment plans.
- The average share price of exercised options.
- The range of exercise prices and weighted average remaining contractual life of options outstanding at the end of reporting period.
- The valuation method used to estimate the fair value of the awards.
- The impact on Statement of Profit and Loss and Balance Sheet for such share-based payments.

SUMMARY

- Ind AS 102 applies to all share-based payment arrangements.
- It is to reflect in its statement of profit and loss account and balance sheet the effects of share-based payment transactions including expenses if any associated with transactions in which share options are granted to employees
- A transaction in which the entity
 - (a) receives goods or services from the supplier of those goods or services (including an employee) in a **share-based payment arrangement**, or
 - (b) incurs an obligation to settle the transaction with the supplier in a **share based payment arrangement** when another group entity receives those goods or services.
- Ind AS 102 applies to transactions other than traditional share option plans including
 - Employee Share Purchase Plan
 - Share Appreciation Rights
 - Other payments based on the issue price of the share

- General measurement principles are as under
 - For Non- employees: Goods and services are measured directly based on fair value of goods and services received
 - For Employees: Goods and services are measured indirectly by fair value of equity instrument granted
 - If fair value is not possible (very rare case): Intrinsic value of the equity instrument
- For Cash Settled transactions the entity shall measure the goods or services acquired and the liability incurred at the fair value of the liability.

SELF TEST QUESTIONS

Question 1

An entity issued 10 shares each to its 1,500 employees subject to service condition of next 2 years. Grant date fair value of the share is INR 120 each. There is an expectation 97% of the total 1,500 employees will remain in service at end of 1st year. However, at the end of 2nd year the expected employees to remain in service would be 91% out of the total 1,000 employees. Calculate expense for the year 1 & 2?

Question 2

A limited issued 100 shares each to its 120 employees subject to service condition for next two years. Grant date fair value of the share is Rs. 85 each, however the fair value at the end of 1st and 2nd year was Rs. 90 and Rs. 95 respectively. Calculate expenses for year 1 and 2.

Solution:

Year	Vest	Expenses
One	1/2	100X120X90X1/2=540000
Two	2/2	100X120X95X2/2-540000= 600000

Question 3

ABC Limited granted to its employees, share options with a fair value of INR 5,00,000 on 1 April 20X0, if they remain in the organization upto 31st March 20X3. On 31st March 20X1, ABC limited expects only 91% of the employees to remain in the employment. On 31st March 20X2, company expects only 89% of the employees to remain in the employment. However, only 82% of the employees remained in the organisation at the end of March, 20X3 and all of them exercised their options

Solution

Period	Period	Fair value	To be vested	Cumulative expenses	Expenses
1	1/3	5,00,000	91%	151667	151667
2	2/3	5,00,000	89%	296667	145000
3	3/3	5,00,000	82%	410000	113333

Question 4

X limited issues 11000 share appreciation rights (SARs) that vest immediately to its employees on 1 April 20X0. The SARs will be settled in cash. Using an option pricing model, at that date it is estimated that

the fair value of a SAR is INR 100. SAR can be exercised any time until 31 March 20X3. It is expected that out of the total employees, 94% at the end of period on 31 March 20X1, 91% at the end of next year will exercise the option. Finally when these were vested i.e. at the end of the 3rd year, only 85% of the total employees exercised the option.

Fair value of SAR	Rs.
31.03.20X1	132
31.03.20X2	139
31.03.20X3	141

Calculate the expenses to be appropriated each year.

Solution

Date	Fair Value	To be vested	Cumulative	Expenses
	100	100%	11,00,000	11,00,000
1st year	132	94%	13,64,880	264880
2nd year	139	91%	13,91,390	26,510
3rd year	141	85%	13,18,350	(73,040)

1. Write a short note on Ind AS
2. Give an overview of Ind AS 102
3. Explain in detail the procedure of valuation of share based transactions.
4. Throw an overview of how vesting conditions affect the share based payment transactions.
5. How is valuation carried out in reload options?
6. "Ind AS 102 and IFRS 2 is same" Comment.
7. Explain how the valuation is done in case of cash settled share based payment transaction?

LIST OF FURTHER READINGS

1. Indian Accounting Standards (IND AS), 2017 Edition, by Taxmann
2. Handbook on Indian Accounting Standards (Ind AS)- Converged Global Accounting Standards by Rajkumar S Adukia
3. Comprehensive Guide to IND AS Implementation by CA Anand J Banka

REFERENCES

1. "Indian Accounting Standard (Ind AS) 102" . Retrieved from <http://mca.gov.in/Ministry/pdf/INDAS102.pdf>
2. "Share Based Payment Transactions", Retrieved from <http://www.caaa.in/>
3. International Financial Reporting Standards (EU) (2010). "IFRS 2 Share-based Payment", Retrieved from https://www.readyratios.com/reference/ifrs/ifrs_2_share_based_payment.html

Lesson 10

Valuation for Mergers & Acquisitions

LESSON OUTLINE

- Introduction
 - Concept of Value & Valuation
 - When is Valuation called for?
 - Types of Values
 - Valuation in context of the “Goal” of Financial Management
 - Written Valuation Reports
- M & A Strategy
 - Synergy
 - Diversification and Shareholder Value – Porter’s 3 tests
 - Types of Mergers
 - Theories of Mergers & Acquisitions
 - Challenges behind Mergers
 - Forms of acquisition
 - Pre-takeover Defence Strategies
 - Post-takeover defence strategies
- Valuation of the Target Company
 - Discounted Cash Flow Analysis
 - Comparable Company Analysis
 - Comparable Transaction Analysis
- The Legal Procedures
 - Examine Object Clauses
 - SEBI Approval
 - Get the scheme approved by the BOD’s
 - Apply to the NCLT
 - Meeting of Shareholders
 - NCLT Orders and Approvals
 - Filing the approvals with ROC
 - Transfer of Assets and Liabilities
 - Issue of Shares and Cash
- SUMMARY
- SELF TEST QUESTIONS

LEARNING OBJECTIVES

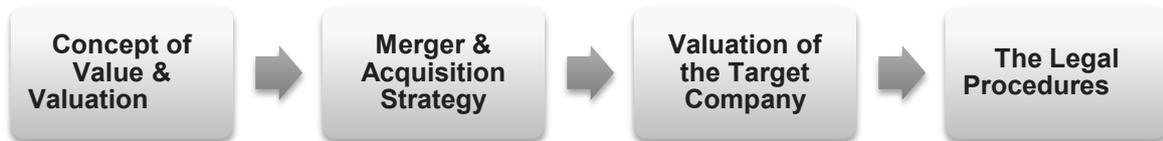
There has been a prodigious growth in the Merger and Acquisitions (M &A) both globally as well as in India. Various sectors, whether it is Banking and Financial Services; Telecom; Steel; Aviation etc. are witnessing merger and acquisitions. Merger and Acquisition is a complex process and involve valuation of both tangible and intangible assets. In view of this, it is crucial to develop a robust understanding relating to the concepts of values, forms of mergers, methods used in valuation, ways or approaches to avert acquisitions etc.

This study lesson encompasses all the above mentioned critical facets that one needs to be conversant for discharging professional obligations pertaining to the valuation during merger and acquisition.

ORIENTATION

This study lesson requires an expert level knowledge, as mergers and acquisitions being the buzzword of today’s business world, it requires an in-depth understanding on various vital concepts like, Types of values; Mergers & Acquisition strategy; Types of mergers; Takeover defence strategies; Valuation of the target company etc.

FAMILY TREE OF CONCEPTS



INTRODUCTION

Concept of “Value” & “Valuation”

Value could be defined around the following 3 parameters:

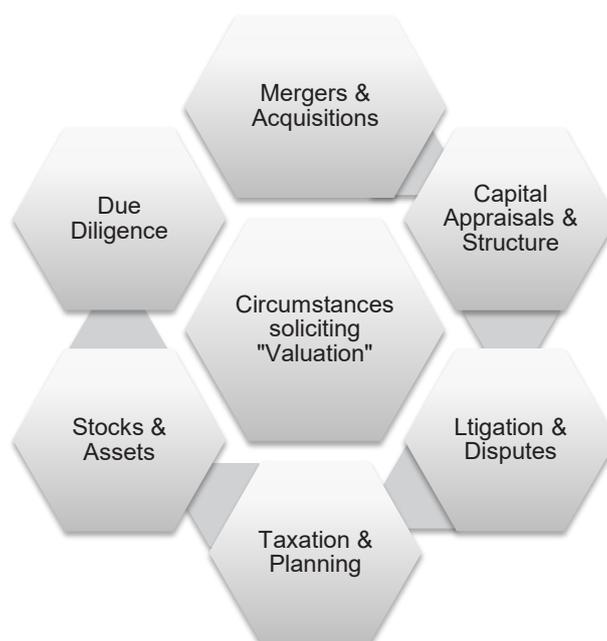
- ✓ The “money’s worth” of a good or a service or a transaction at large
- ✓ The amount for which it can change hands in the market and hence a reflectant of the purchasing power
- ✓ Tangible or Intangible, represents a flow of economic benefits that emanate from it

Valuation, therefore is the process of estimation of such value and assigning or attaching value to that thing in question.

When is Valuation called for?

Valuation is conducted for a variety of purposes, including transactions, taxation, compliance, transition of ownership, accounting, bankruptcy, litigation and many a times, in the usual course of business for assets and stocks too, and sometimes necessary to estimate the liabilities that are staring at the Organization as well.

Broadly, the below picture should tell you the key circumstances where a correct valuation becomes so imperative.



Types of Values

It is pertinent at this point to note that the term “value” could have a number of connotations, and that could vary depending upon the type of transaction inviting the Valuation, the parties involved, the purpose for which it is required and whether regulated or otherwise.

The below are a few “types” of Values that could be estimated depending upon the specific situation / purpose at hand:

- ✓ Book Value
- ✓ Salvage Value
- ✓ Original Cost
- ✓ Written Down Value
- ✓ Replacement Value
- ✓ Fair Value
- ✓ Net Realisable Value
- ✓ Market Value
- ✓ Economic Value
- ✓ Residual Value

Valuation in context of the “Goal” of Financial Management

You would recollect that a business has several goals and objectives, often seen as routes to a common destination, that is, all the goals converge to a single and the “only goal”, which is maximisation of shareholder’s wealth.

Hence, when we are studying the “valuation” in the context of business, the realm of analysis becomes fairly wide to include not only the current, but also the past performance and future prospects. It is also extremely imperative to do a thorough and holistic assessment of the assets and resources in the Company, both tangible and intangible in order to make an assessment of the future earning capabilities of the Company.

Business Valuation is a fascinating topic, as it requires an application of financial techniques, modelling skills to estimate “value” and when it comes to merger and acquisitions, it also requires extremely good influencing and negotiating skills, which would be needed to price the deal.

To set the tone of the material going forward, hence, it is quite logical to state that the students must get familiar and thorough with the various methods and techniques to be adopted for valuation in the circumstances of M&A, the pros and cons of each alternative and to be able to zero down upon the most appropriate method given the specific situation at hand.

Written Valuation Reports

Written Valuation Reports must adequately and effectively summarise the appraisal / assessment procedures, the methodology adopted and must certainly comprise of:

- a) A background of the Company (subject) under valuation
- b) The chosen valuation method, it’s appropriateness to the Company (subject), the purpose and the circumstance at hand
- c) The methodology in detail, referring to the source data and information

- d) The reliance placed on any other business document
- e) Qualitative assessment
- f) Quantitative assessment
- g) The limitations or constraints the appraisal process went through and the extent to which this may or may not have impacted the valuation
- h) The certificate of valuation
- i) The credentials and the qualifications of the valuer

MERGER & ACQUISITION STRATEGY

An Organisation could venture in to a new business taking any of the following routes:

- a) Acquisition
- b) Funding a start-up
- c) Joint Ventures / Strategic Partnerships

The reason why mergers & acquisitions appears to be the most attractive route, despite all the compliances is, that it is a much quicker way to enter the market vs. starting from the scratch via a start up route.

Another advantage is synergy, one can grab a bigger market share, create a backward or forward integration and attract a much larger customer base, and simultaneously looking to reduce the cost of operations.

The ancillary advantages that come along with an acquisition over and above the key ones above are overcoming the entry barriers, acquiring technical infrastructure and changing the league on the value chain itself by positioning itself as a larger conglomerate and scaling up quick to match competition, with the necessary infrastructure and visibility and brand recognition without having to spend a huge budget on marketing and advertisements which would have been the key otherwise. Most importantly, there is a strategic advantage of taking a giant leap skipping the entire gestation period which is cumbersome and costly in terms of time and effort, and the Company can straight away start focusing on building a strong market position in the target industry.

Synergy

Now Synergy has to be the most important objective, which triggers and drives all acquisitions. This is quite simple; the underlying objective has to be “wealth creation” in excess of what the firms would enjoy without the M&A.

Synergy, therefore is imbibed when the value of the combined entity after M&A, is greater than the sum of the values of the individual entities prior to it.

This synergy could be derived by:

1. Exploiting the “economies of scale”
 - a. The unit costs should hopefully decline with the increase in production
2. Exploiting the “economies of scope”
 - a. The same resources could then be multi-tasked ushering productivity too
3. Efficient allocation of Capital
 - a. Optimally utilising the assets and resources to derive more value for the business

However, there could be many problems associated with the objective of deriving strategy:

- a) Integration, undoubtedly is the biggest challenge
 - a. Integration of assets, resources, and the most challenging part is people and policies
- b) The risk of completing the deal too fast to avoid counter-bids
 - a. Most of these are strategically driven and hence at the cost of the time constraint, often thorough due diligence could be compromised making this activity, to be fraught with risks

All in all, although the most important driver that undoubtedly triggers, launches and drives any M&A effort, synergy, yet the objective could still be susceptible and prone to imminent challenges, which need to be carefully planned and thought through.

Diversification and Shareholder Value – Porter’s 3 tests

According to Porter, if the M&A or diversification objective has to create shareholder value, it must meet 3 tests:

- I. **The attractiveness test** – the diversification must be directed towards potentially attractive industries. This is going to be important as the acquisition must be directed towards a target based out of a growing industry for it to create value for the shareholders
- II. **The cost of entry test** – the biggest challenge in fuelling an M&A exercise is finding the right target company, and consequently the dilemma that the acquirer typically faces is whether it should pay a premium price and acquire a successful company or buy a poorly performing company at a distress or reduced bargain price and then invest time and efforts on it. This again would be dependant on whether the Company is constrained by cash reserves available at it’s disposal or not. If it is constrained, but has the necessary knowledge and resource pools, it might be better off for it to acquire a struggling company with a long-term horizon. However, if the acquirer company is cash rich and is not constrained by funds, the most viable option would be to buy a strongly positioned company, more so when it has little knowledge of, unless off-course when the target fails the cost of entry test. The cost of entry test simply put requires “financial viability”, that is the present value of the future benefits from the combined entity must exceed the acquisition cost needed to pitch in and sustain the operations and hence a high acquisition price has chances of rendering the proposal not meeting the cost of entry test
- III. **The better-off test** – this is a reinforcement of the synergy principle, which clearly enunciates, that together the entities must be financially better off than each of them were individually

Types of Mergers

In mergers, the combining companies engage in prior negotiations which may lead to the deal getting successfully closed. In case it is the “tender offer” route, the acquiring company may seek to hold initial discussions with the top executives of the target company. In case they aren’t able to reach consensus, the acquirer may make an open offer to the shareholders of the target company to tender the shares at a specified price. Mergers generally tend to be a friendly negotiation, whereas tender offers could turn hostile.

There are 3 types of mergers:

- I. **Horizontal** - when two firms in the same lines of business marry, example, Coca Cola and Parle, Exxon and Mobil
- II. **Vertical** - when two firms at different points or stages in the supply chain / stages of production come together, example Microsoft and Hotmail, Google and You-tube
- III. **Diversification** - this is also called a conglomerate merger as it refers to the situation when two companies in unrelated lines of business come together

Theories of Mergers & Acquisitions

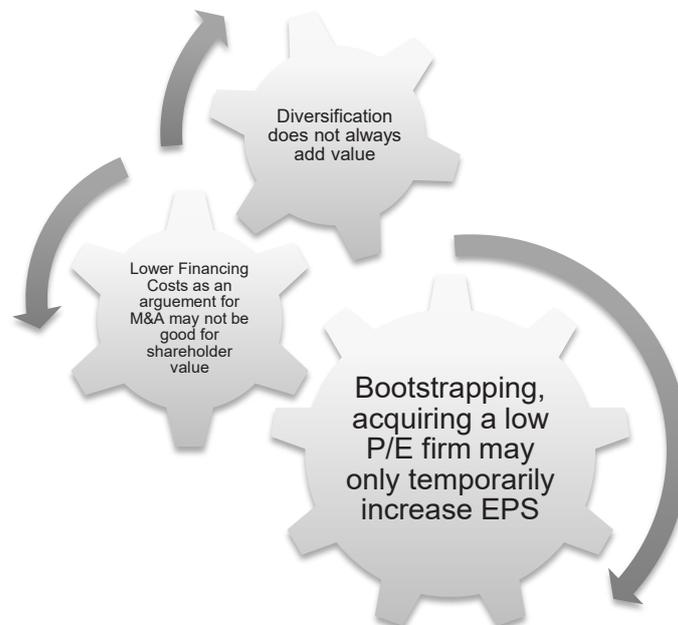
There are substantially 3 theories that are behind the subject of M&A.

- o *Synergy* - here the value of the combined firm post the M&A is greater than the sum of the values of the individual firms prior to it
- o *Hubris* - this is the result of the winner's curse, causing bidders to overpay. It is possible though that the combined value remains unchanged. Managerial hubris is the unrealistic belief held by managers in the bidding firms that they can manage the assets of the target firm more efficiently than the target firm's current management and hence this tendency to spend on a merger that doesn't return enough profits
- o *Agency* - the total value here stands decreased as a result of the mistakes committed by the managers who put their own vested interests above the well being of the Company and this is a typical case of "agency conflict"

It is prudent to note that the target company always gains, that's quite obvious as they accept the offer only when it's profitable, but the acquirer gains only when there is synergy and loses on both the other occasions. In the Hubris situation, there is no change in the value and hence the effort becomes unproductive and in the Agency situation, the total value becomes negative.

Challenges behind Mergers

The biggest challenge in M&A is that synergy estimates are often optimistically aggressive and consequently the prices paid for acquisitions often turn out to be unviable and excessive. The biggest task as aforementioned is the combination and integration of cultures which may be diverse, even if not, combining the mindsets may become extremely difficult and challenging. The following diagram below tells you some of the rationale that appear ambiguous for M&A's.



Example around bootstrapping

Look at the example below. If you observe that if the acquirer would contemplate acquiring the target, the exchange ratio proposed would be 2:1. Since, to compensate the shareholders of the target company, they would need their existing wealth at a minimum, which is (50000×50) which is Rs 25,00,000 which can be compensated by 25000 shares of the acquirer of Rs 100 each and hence the exchange ratio works out to $(100/50)$, which is 2:1.

	A	T	C	
Price (P)	100	50		
EPS (E)	4	2.5		
P/E Multiple	25	20		
No of Shares	100000	50000	125000	
Exchange Ratio			2:1	<i>For every 2 shares in the target co., 1 share of the acquirer would be issued</i>
Earnings	400000	125000	525000	
EPS (Combined)			4.2	

If you look at the example below, the EPS for the Combined Entity works out to Rs 525,000 / 125,000 which is 4.2, which is higher than the acquirer stand-alone. This is exactly the bootstrapping effect, the Acquirer firm has a higher P/E ratio than the Target and consequently gives the impression that the EPS of the combined firm will increase (from 4 to 4.2), whereas in reality this may not work, because if you look at the transaction, there may not be any reasons to believe that synergies or growth would emanate from the merger, yet it is possible to create an illusion of synergy. When a Company's earnings increase as a consequence of the merger transaction itself, rather than because of the resulting economic benefits of the combination, it is referred to as the "bootstrapping effect".

Forms of acquisition

There are two basic forms of acquisition, that is, the acquirer can either purchase the stocks or the assets of the target company.

A stock purchase occurs when the acquirer gives the target company's shareholders some combination of shares in the acquiring company and cash in exchange of shares in the target company. However, for a stock purchase to be approved and to go through, it requires at least 50% of the target company's shareholders to approve it, and sometimes more depending on the legal jurisdiction. Although obtaining the shareholders' approval could be time consuming and difficult, it still appears a good ploy to circumvent the target company's management in cases where the management opposes the merger.

An asset purchase occurs when the acquirer purchases the assets of the target company with consideration to

be paid directly to the target company. One big advantage of this type of acquisition is that it can be conducted more quickly and easily than a stock purchase because shareholder approval isn't usually required unless a substantial proportion of the assets is being purchased, usually > 50%. The other advantage is that the acquirer can focus on buying the assets of the Target Company, may be just a specific division rather than the Company itself.

Major differences are bulleted in the table below.

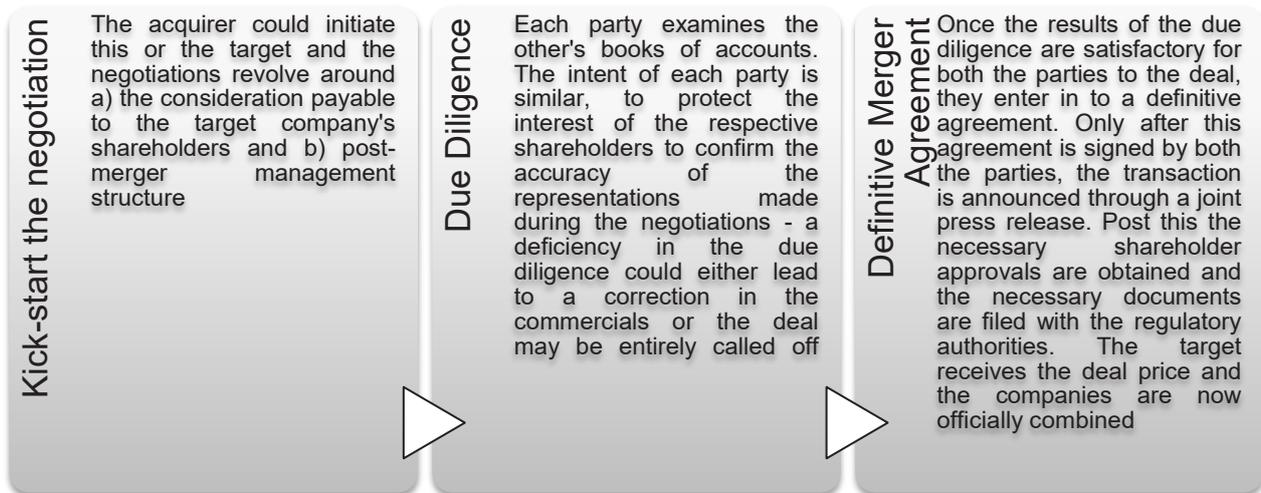
Payment	To the Target Company's shareholders in exchange of their shares	To the Target Company in exchange of the assets
Approval	Shareholders' approval required	Shareholders' approval usually not required
Corporate Taxes	No corporate level taxes	Target Company pays Capital Gain Taxes
Shareholder Taxes	Shareholders of target company pays Capital Gains Taxes	No direct consequence on the target company shareholders

The mind-set of the Target

The mergers could be friendly or hostile, depending on how the target company's senior managers and directors perceive the offer. Now, whether a merger is friendly or hostile, would have an impact on how it is completed, what regulations must be followed, how long the transaction would take and how much of value is created (or destroyed) as a result of the combination.

Friendly Mergers

The flow of events is well depicted in the diagram below in case of a friendly merger.

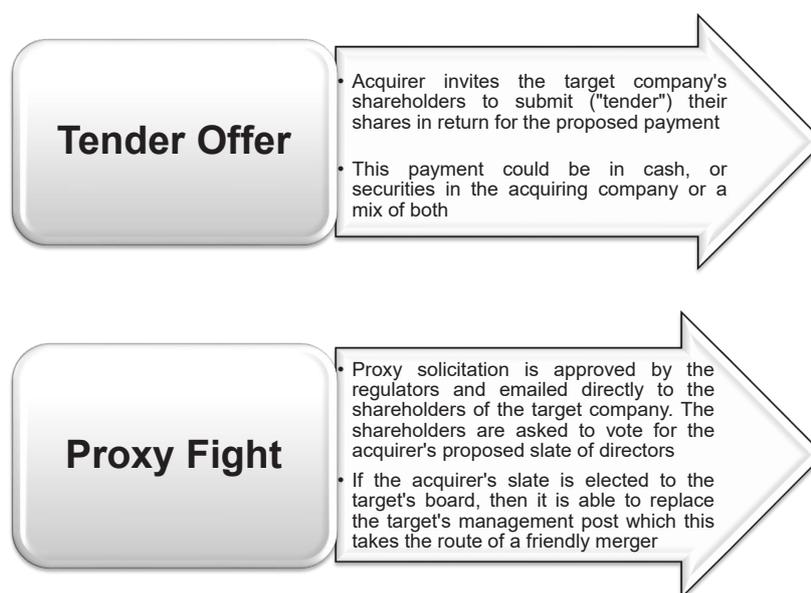


Hostile Merger

In case of a hostile merger, one which is opposed by the target company's management, the acquirer may decide to circumvent the target management's objections by submitting a proposal directly to the Board of Directors of a target company, bypassing its CEO and this tactic is called a bear hug.

Post the bear hug, there could be two routes. One route is where the target management will reconsider its decision and enter in to negotiations, which is unlikely, post which this takes the path of the friendly merger. The other route is that a bear hug doesn't work, in which case the acquirer may contemplate reaching out to the shareholders of the target company directly.

Once the hopeful acquirer has taken a decision to reach out to the shareholders of the target company directly, this could again culminate into two paths, i.e. a tender offer or a proxy fight.



Pre-takeover Defence Strategies

The takeovers are often subject to resistance and some of the key ones are listed and described below.

Poison Pills: The poison pill is a legal device that makes it prohibitively costlier for an acquirer to take control of the target, without the prior approval of the target's board of directors. Most poison pills make the target company less attractive by creating rights that allow for issuance of shares of the target company at a substantial discount to market value.

There are two types of such poison pills, flip-in pill and flip-over pill. In case of a flip-in pill, these rights remain inactive until a threshold limit is reached, say 10%. So, in case 10% of the shareholding for any investor is breached, these pills are activated and immediately allow the shareholders (except the acquirer) of the target company to purchase the shares of the target company at a substantial discount (say 50%). Now, suppose all the existing shareholders exercise the right, and purchase these shares. Hence, the number of existing shares double and if it is a cash-for-share exchange, the number of shares that need to be compensated for by the acquirer doubles and if the acquisition price remains unchanged, the cash outlay for the acquirer would double and hence makes the transaction unattractive. In case of a flip-over pill, these allow rights to the shareholders of the target company to acquire shares of the acquirer (or the surviving combined firm) at a substantial discount which also makes the deal unattractive at the outset.

Poison Puts: In case of poison puts, the bond-holders of the target company have the right to put the bonds back at the company at a pre-specified redemption price. Hence, this provision also gets triggered by a hostile takeover attempt and what happens is that there is an immediate cash drain as these bonds have to be redeemed by the Company at a higher than par value price, typically. The effect of this poison put therefore is that an acquirer must be prepared to refinance the target's debt immediately after take over to cover the cash crunch and hence raises the cost of acquisition.

Restricted Voting Rights: Some target companies adopt a mechanism that restricts the shareholders who have recently acquired a big chunk of shares or who have exceeded a threshold % of shareholding, from voting on these shares. Shareholders who exceed this trigger point are no longer able to exercise voting rights on these shares unless the board of the target company releases the constraint. Hence, the very possibility of taking the effort to acquire a controlling stake but not being able to vote on these shares serves as a dampener.

Golden Parachutes: These are compensation arrangements between the senior management and the target company. These contracts allow the senior executives to receive hefty cash settlements, if they leave pursuant to a change in control, and this stretches to a number of years' salary which is an attractive exit option. One reason these persist is that the senior executives have little fear of job losses and prefer to stick on till they exercise the exit option and without these Golden Parachutes, the target company executives would have left for better offers quicker to secure their future. However, from an acquirer's perspective, the impact may not be much as compared to the overall takeover consideration.

Post-takeover defence strategies

Share Repurchase: After the takeover is initiated, a target may initiate a cash tender offer for its own outstanding shares. An effective repurchase offer has the potential to increase the cost for the takeover (takeover premium) as the acquirer will now have to alter its bid upwards for it to remain competitive. That itself could be a put off for the deal.

Leveraged Buy Out: In case of a leveraged buyout, the management of the target can partner with a private equity firm that specialises in buyouts to put in some capital and the remaining purchase price comes through from borrowings and hence the term "leveraged". With the proceeds that come in, that is used to buy all the shares of the target company. Hence, essentially what is done is the target company buys all its shares to convert in to a private limited company in the transaction, called Leveraged Buy Out (LBO). The stakes therefore in the target company now shift to the Private Equity Firm (may be 10%) and the balance 90% of the firm is financed by debt (Banks). Now, the Private Equity Firms enjoy the effects of financial leverage that can magnify the returns, the only catch is that there has to be a due diligence conducted prior to conclude that the target company has sufficient strength in the profit and cash forecasts to be able to cover the future debt payments. The management then is compensated basis the performance of the firm post the LBO is completed.

This strategy therefore allows the target to defend against a hostile bid provided that the LBO provides to the target shareholders a price that is greater than the takeover price offer by the acquirer.

Pac Man Defence: The target can defend itself by making a counter-offer to acquire the hostile bidder. This is a rarely used technique as it is unlikely that the smaller company (target) makes a bid for the larger company (acquirer).

White Knight Defence: This is probably one of the best outcomes for the target shareholders. The way it works essentially is that the management or board of the target company to seek a third party to purchase the company in lieu of the hostile bidder. This third party is called the 'White Knight', as it is coming to the aid of the target. This technique is used by the target when the acquisition by the white knight sounds like a strategic fit as compared to the hostile bidder. Based on this strategic fit, the third party can also justify a higher price for the target than what the hostile bidder is offering. In such cases, the winners curse prevails, as often such negotiations are driven by a tendency for the winner to overpay to grab the deal and this competitive bidding

ends up being extremely favourable for the target shareholders.

VALUATION OF THE TARGET COMPANY

There are some basic techniques that are consistently applied in the valuation of target companies in the M&A space. Some of them are:

- ✓ Discounted Cash Flow Analysis
- ✓ Comparable Company Analysis
- ✓ Comparable Transaction Analysis

Discounted Cash Flow Analysis: The methodology that is used here is that free cash flows are discounted at the expected rate of return to arrive at the present value of the economic benefits that are expected from the entity and that when combined with the present value of the terminal valuation, helps ascertain the valuation of the target company.

Let us take an example below to understand. Let us say we are in 2017 and we are exploring acquisition of the target company and forecasts for the next 5 years until 2022 have been provided as under.

		5%					
		2,017	2,018	2,019	2,020	2,021	2,022
Income Statement							
Revenues		2,50,000	2,62,500	2,75,625	2,89,406	3,03,877	3,19,070
Cost of Goods Sold		<u>1,00,000</u>	<u>1,05,000</u>	<u>1,10,250</u>	<u>1,15,763</u>	<u>1,21,551</u>	<u>1,27,628</u>
Gross Profit		1,50,000	1,57,500	1,65,375	1,73,644	1,82,326	1,91,442
Selling General & Administration Expenses		<u>50,000</u>	<u>50,000</u>	<u>60,000</u>	<u>60,000</u>	<u>75,000</u>	<u>75,000</u>
EBITDA		1,00,000	1,07,500	1,05,375	1,13,644	1,07,326	1,16,442
Depreciation & Amortisation		<u>37,500</u>	<u>39,375</u>	<u>41,344</u>	<u>43,411</u>	<u>45,581</u>	<u>47,861</u>
EBIT		62,500	68,125	64,031	70,233	61,744	68,582
Interest Expense (Finance Costs)		<u>6,600</u>	<u>5,500</u>	<u>4,400</u>	<u>3,300</u>	<u>2,200</u>	<u>1,100</u>
PBT		55,900	62,625	59,631	66,933	59,544	67,482
Tax (assumed @ 30%)		<u>16,770</u>	<u>18,788</u>	<u>17,889</u>	<u>20,080</u>	<u>17,863</u>	<u>20,245</u>
PAT (Net Income)		39,130	43,838	41,742	46,853	41,681	47,237
Balance Sheet							
Fixed Assets		1,50,000	1,57,500	1,65,375	1,73,644	1,82,326	1,91,442
Current Assets		<u>45,000</u>	<u>47,500</u>	<u>50,000</u>	<u>52,500</u>	<u>55,000</u>	<u>57,500</u>
Total Assets		1,95,000	2,05,000	2,15,375	2,26,144	2,37,326	2,48,942
Current Liabilities		22,500	23,750	25,000	26,250	27,500	28,750
Long Term Loans		<u>60,000</u>	<u>50,000</u>	<u>40,000</u>	<u>30,000</u>	<u>20,000</u>	<u>10,000</u>
Total Liabilities		82,500	73,750	65,000	56,250	47,500	38,750
Retained Earnings		12,500	31,250	50,375	69,894	89,826	1,10,192
Equity Share Capital		<u>1,00,000</u>	<u>1,00,000</u>	<u>1,00,000</u>	<u>1,00,000</u>	<u>1,00,000</u>	<u>1,00,000</u>
Onwers' Equity		1,12,500	1,31,250	1,50,375	1,69,894	1,89,826	2,10,192
Liabilities & Equity		1,95,000	2,05,000	2,15,375	2,26,144	2,37,326	2,48,942

Notes:

- o The revenue has been assumed to grow YOY @ 5%
- o The Cost of Goods Sold have been assumed to be variable @ 40%
- o Depreciation on Plant & Machinery is considered @ 25% on the WDV of the block

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- o Finance Costs (Interest on Long Term Loan) has been considered @ 11%
- o Tax Rate is assumed @ 30%

Now, once the forecasts have been prepared around the Income Statement and the Balance Sheet for the next, say 5 years, the next task at hand is to arrive at the valuation of the target company.

The Free Cash Flow (FCF) is the most widely used technique under this methodology. FCF is derived as under:

FCF = NOPAT + Non-Cash Charges +/- Changes in Working Capital – Capital Expenditure

Having said that, let’s see how this has been applied below, to the example above (figures in ‘000’s).

		2,018	2,019	2,020	2,021	2,022	Total
Free Cash Flow							
Net Income		43,838	41,742	46,853	41,681	47,237	
Add: Interest (1-tax)		3,850	3,080	2,310	1,540	770	
NOPAT (also equal to EBIT(1-tax))		47,688	44,822	49,163	43,221	48,007	
Add: Depreciation		39,375	41,344	43,411	45,581	47,861	
Delta Working Capital		1,250	1,250	1,250	1,250	1,250	
Delta Capital Expenditure		46,875	49,219	51,680	54,264	56,977	
Free Cash Flow		38,938	35,697	39,644	33,289	37,641	
Discounting Factor (WACC, say 10%)	10%	0.909	0.826	0.751	0.683	0.621	
PV (FCF)		35,398	29,502	29,785	22,737	23,372	1,40,793
TV						9,97,483	
PV (TV)						6,19,359	6,19,359
Free Cash Flow Valuation							7,60,152

The most important part of this valuation is the estimation of the Terminal Value (TV).

Now, in the example above, after 5 years, the Free Cash Flows are expected to grow at 6% YOY till perpetuity.

Hence, to value the TV, we apply the Gordon’s Growth Model, as under:

TV_5	=	$\frac{FCF_6}{R_e - g}$	=	$\frac{FCF_5 (1+g)}{R_e - g}$
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When we are applying the FCF to the firm, we should use the WACC instead of Re (cost of equity) as we have done in the example above, for discounting the cash flows to the present.

Hence, using the formula above, we apply it to the FCF5, i.e. $37641(1+6\%) / (10\%-6\%)$ and arrive at a TV of Rs 997,483 and this is discounted back at 10% required rate of return to the PV of Rs 619,359.

This TV, when added to the PV of the FCF’s of 140,793 helps us ascertain that the FCF Valuation of the Target Firm is Rs 760,152 (in ‘000’s).

There are several advantages of using the Discounted Cash Flow Technique, which are:

- ✓ The expected changes in the target company's cash flows can be readily modelled to arrive at the best-case and worst-case scenarios.
- ✓ The estimated intrinsic valuation is attempted to be arrived at using the forecasts provided.
- ✓ The changes in estimates and assumptions also can be modelled.

However, some of the disadvantages are:

- ✓ There are a number of assumptions as you can see above and each of it, has to be estimated realistically and accurately lest it will interfere with the results of the model and may also lead to incorrect valuation and hence judgemental errors.
- ✓ There is always uncertainty around the future vis-à-vis the growth rates, especially when ascertaining the TV by forecasting the FCF at the terminal year in to the future and that could make the model unrealistic and somewhat questionable.

Comparable Company Analysis: This is an alternative approach used by Merchant Bankers to estimate acquisition values. The very first step in this approach is to find companies that can comprise and constitute a comparable set to the target company. These could be from the same industry or from similar industries too. This sample should ideally be created using companies that have a similar capital structure to the target.

Once this is done, the next step is to create value-based measures for the comparable companies that could be used in the valuation exercise, and some of these are, as under:

- ✓ Enterprise Value / EBITDA
- ✓ Enterprise Value / EBIT
- ✓ Enterprise Value / Cash Flow
- ✓ Enterprise Value / Sales

Note that Enterprise Value = Market Value Debt + Market Value Equity – Cash & Investments.

Also, observe that all the denominators are pre-interest and hence are usually applied when the companies have differences in leverage.

The other option is to use Equity Multiples, such as:

- ✓ Price / Cash Flow per share
- ✓ Price / Sales per share
- ✓ Price / Earnings per share
- ✓ Price / Book Value per share

Post the above calculations, the analysts review the measures of central tendency (mean, median etc.), which are subsequently applied to arrive at the target valuation price.

At this juncture, it is important to note that up to this point, the process has derived estimates of where the target company's stock should trade as compared to its peers (comparables) in the market place. However, in a bid to arrive at the acquisition price, the analyst must add on to this, a specific component, takeover premium. The takeover premium is the amount by which the takeover price for each share must exceed the current stock price of the target company; in order to entice the shareholders to relinquish the control in the target company in favour of the acquirer.

- ✓ The source data, being from the market is definitely a notch higher with regards to authenticity vis-à-vis the Discounted Cash Flow analysis, which is built on a number of assumptions.

However, there could be some disadvantages, associated with the approach too, as below:

- ✓ There could be mispricing owing to market inefficiencies causing the comparable stocks to be over or under-valued, which could cause aggressive or conservative target acquisition estimates as the case may be.
- ✓ There is no adjustment to the broader plans of the target company like a change in the capital structure etc. as this is not possible in the above approach.
- ✓ The takeover premiums may be very specific to the dynamics of the respective takeovers of the companies considered and those circumstances may not apply to the current acquisition of the target and hence may not be appropriate to use to arrive at the takeover premium, when calculating the acquisition price.

Comparable Transaction Analysis: As the term suggests, this approach is very similar to the comparable company analysis approach, just that, in this case the analysts use the details from recent acquisitions and takeovers directly, to arrive at the target company's acquisition value.

Let us consider the following example, wherein an analyst with the Merchant Bankers has assembled the sample containing companies involved in the acquisition within the same industry. These are all companies that have been acquired in the recent past.

		Acquired Cos					
Step 1	➔	Valuation Variables	Co 1	Co 2	Co 3		
		Acquisition Stock Price	35.00	16.50	87.00		
		EPS	2.12	0.89	4.37		
		CF/share	3.06	1.98	7.95		
		BV/share	9.62	4.90	21.62		
		Sales/share	15.26	7.61	32.66		
Step 2	➔	Acquisition Multiples	Co 1	Co 2	Co 3	Mean	
		P/E	16.51	18.54	19.91	18.32	
		P/CF	11.44	8.33	10.94	10.24	
		P/BV	3.64	3.37	4.02	3.68	
		P/S	2.29	2.17	2.66	2.38	
Step 3	➔	Valuation Variables	Target (A)	Mean of Recent Acquisitions (B)	Estimated Stock Price (A) X (B)	Weights	Weighted Estimates
		EPS	2.62	18.32	48.00	0.2	9.60
		CF/share	4.33	10.24	44.33	0.4	17.73
		BV/share	12.65	3.68	46.51	0.2	9.30
		Sales/share	22.98	2.38	54.58	0.2	10.92
Weighted Avg Acquisition Price						47.55	

Note, here there is no adjustment of loading the takeover premium to the estimated takeover price, as the exercise doesn't start with the valuation variables of the target company, rather, it sources the data from

comparable acquisitions directly and hence the takeover premium is already embedded in the acquisition prices of the comparables which have been acquired recently. Here the comparison is directly with the prices paid in the recent M&A deals.

The advantages of this approach are:

- ✓ It is a simple, straight forward, logical approach and there is no necessity to estimate the takeover premium separately.
- ✓ The source data, comes directly from the values that were recently established in the market, definitely a notch higher with regards to authenticity vis-à-vis the Discounted Cash Flow analysis, which is built on a number of assumptions.
- ✓ The possibilities of potential litigation risks and costs associated with it are minimised owing to the fact that the prices are established through the recent comparable transactions.

The disadvantages however are:

- ✓ There is a risk that the takeover prices of the companies used as comparables may not have been accurately determined causing the acquisition price to be skewed either aggressively or conservatively.
- ✓ There could be a paucity of retrieving data around recent comparable acquisitions.
- ✓ There is no adjustment to the broader plans of the target company like a change in the capital structure etc. as this is not possible in the above approach.

Evaluation of Bids

Until now we have been focusing on the valuation of the target. However, this is only half the job done. In a M&A transaction, the acquirer would want to pay the minimum possible price to acquire control, while the shareholders of the target company would want to maximise the consideration in exchange of the shares they will surrender to relinquish control of the target company.

Now, the modus of the payment, the form it takes and the valuation will eventually decide the distribution of risks between the counterparties to the deal.

This negotiation can be interpreted by the following equation:

$$VC = VA + VT + S - C$$

Where;

VC; is the Value of the Combined Entity

VA; is the Value of the Acquirer

VT; is the Value of the Target

S; represents the Synergies being derived from the M&A Transaction

C; represents the Cash paid to the Target Shareholders

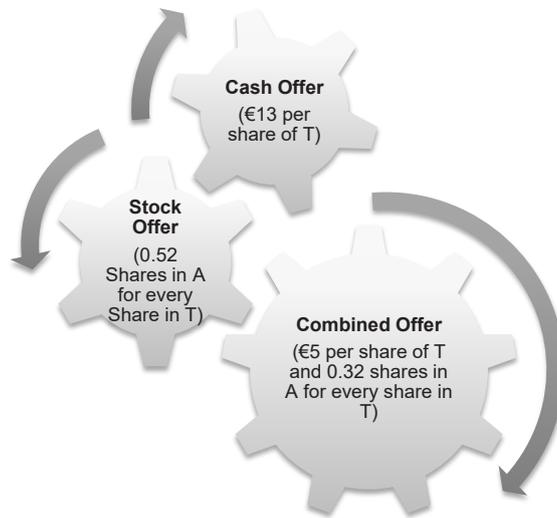
Bidding, therefore should generally be confined to a range that is mandated and dictated by the synergies that are expected from the transaction. Each party to the transaction would hence try and capture and imbibe the maximum possible share out of the resultant synergies. It is therefore very clear that the analysis in any M&A transaction not only hinges around the valuation of the target company, but also around the valuation of synergies emanating from the deal.

Let us take a close look at the transaction below to understand the concept and its application in greater detail.

Assume, the M&A deal is structured as under, between the Acquirer (A) and the Target (T). Let us assume that the expected value of Synergies from the deal is €250 Million.

	A	T
Pre-merger stock prices (In €)	25	10
No of shares outstanding (In Millions)	80	50
Pre-Merger Mkt Cap (Million €)	2000	500

Now, assume there are three options being evaluated, as described in the diagram below.



Let us now evaluate every option and try and decipher the gains that accrue to the acquirer and target respectively.

Cash Offer

In case of the Cash Offer, the scenario will look like this.

Cash Offer	vc	2100	} The sum total is 250 Million Euros, the synergy
	Gain _{Acquirer}	100	
	Gain _{Target}	150	

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Notes:

- o The VC= $2000 + 500 + 250 - (13 \times 50) = \text{€}2100$ Million
- o Hence A gains by $\text{€}100$ Million ($2100-2000$) and T gains $\text{€}150$ Million ($650-500$)
- o Note how the $\text{€}250$ Million of Synergies have been grabbed between the Target and the Acquirer and hence a lot of negotiation goes in to this while clinching the deal

Stock Offer

In case of Stock Offer, the situation will look like this.

Stock Offer		V_C	2750	} The sum total is 250 Million Euros, the synergy
		Gain _{Acquirer}	75	
		Gain _{Target}	175	
Value of the Combined Entity		2,750		
No of Shares Post Merger		106		
Price / share		26		
Acquirer's share in the Combined Entity		2,075		
Target's share in the Combined Entity		675		

Notes:

- o The VC = $2000 + 500 + 250 - 0$, i.e. $\text{€}2750$ Million
- o 0.52 shares of A were issued for every share in T and hence 26 Million shares were issued and the no. of shares post-merger came to $80 + 26$, which is 106 Million Shares and hence the price per share post-merger came to close to 26 per share. Therefore, the Gain to A is arrived at to be $\text{€}75$ Million ($2075-2000$) and Gain to T was arrived to be at $\text{€}175$ Million ($675-500$)
- o Note how the $\text{€}250$ Million of Synergies have been grabbed between the Target and the Acquirer and hence a lot of negotiation goes in to this while clinching the deal

Combined Offer

In case of the Combined Offer, the scenario looks like this.

Combined Offer		V _c	2500	} The sum total is 250 Million Euros, the synergy
		Gain _{Acquirer}	83	
		Gain _{Target}	167	
<hr/>				
Value of the Combined Entity	2,500			
No of Shares Post Merger	96			
Price / share	26			
Acquirer's share in the Combined Entity	2,083			
Target's share in the Combined Entity	417			

Notes:

- o The VC = 2000 + 500 + 250 – (5 X 50), i.e. €2500 Million
- o 0.32 shares of A were issued for every share in T and hence 16 Million shares were issued and the no. of shares post-merger came to 80 + 16, which is 96 Million Shares and hence the price per share post-merger came to close to 26 per share. Therefore, the Gain to A is arrived at to be €83 Million (2083-2000) and Gain to T was arrived to be at €167 Million (417-500+(5 X50))
- o Note how the €250 Million of Synergies have been grabbed between the Target and the Acquirer and hence a lot of negotiation goes in to this while clinching the deal

Practical Illustrations

1. The following information is provided relating to the acquirer (A) and the target (T).

	In Crores	
	A	T
PAT	50.00	10.00
NO. of Shares	5.00	2.50
P/E	25.00	12.50

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- a) What is the swap ratio based on current market prices?
- b) What is the EPS of the acquirer after acquisition?
- c) What is the expected Market Price per share (MPS) of the acquirer post acquisition, if the P/E remains unchanged?
- d) What is the value of the combined entity?
- e) What is the Gain or Loss to the shareholders of the A & T respectively?

Solution

a) The swap ratio is determined as under:

		<u>A</u>	<u>T</u>
	EPS	10.00	4.00
	MPS	250.00	50.00

Hence the Swap (Exchange) Ratio works out to 1 share in A for every 5 shares in T (i.e.; 250/50).

b) EPS after acquisition is as under

		<u>Combined Entity</u>
	PAT	60.00
	NOS	5.50
	EPS	10.91

Note, applying the Exchange Ratio, it is implied that for 2.5 Cr shares in T, 0.5 shares of A were issued and hence the NOS for the Combined Entity was 5.5 Cr. The combined PAT works out to 60 Cr and hence the EPS of the combined entity comes to Rs 10.91 per share.

c) It is given that the P/E ratio remains unchanged and hence the MPS for the acquirer post acquisition comes to Rs. 272.73 as under, by applying (P/E X EPS):

P/E	25.00
MPS	272.73

d) The value of the combined entity comes to INR 1500 Cr. As under, by applying (NOS X MPS):

NOS	5.50
V _c	1,500.00

e) Gain or loss is computed as under for the shareholders of both the companies

Solution

a)

	1	2	3	4	5	
Right Ltd.	175.00	200.00	320.00	340.00	350.00	
TV					3,675.00	
				Total	4,025.00	
DF's	0.87	0.76	0.66	0.57	0.50	
PV	152.25	151.20	210.56	194.48	2,000.43	2708.92
Merged	400.00	450.00	525.00	590.00	620.00	
TV					7302.22	
				Total	7922.22	
DF's	0.87	0.76	0.66	0.57	0.50	
PV	348.00	340.22	345.45	337.48	3937.34	5308.47

Notes:

- o DF's are discounting factors @ 15% (Cost of Capital)
- o TV is the Terminal Value and is calculated as under

TV_5	=	$\frac{FCF_6}{R_e - g}$	=	$\frac{FCF_5(1+g)}{R_e - g}$

Hence, $TV_5 = 350 \times (1+5\%) / (15\% - 5\%)$ for Right Ltd. and $TV_5 = 620 \times (1+6\%) / (15\% - 6\%)$ for the merged entity.

- b) The value of acquisition comes to INR 2599.56 which is the difference between the Merged Entity and the Value of the Acquirer before the acquisition, and hence can be construed as the Value of the Target (acquisition) assuming there are no synergies emanating from the M&A deal.
- c) For the sake of calculations, let's assume that the shares outstanding for each company are 500.

Particulars	M Ltd.	N Ltd.
Profits after tax (PAT)	Rs. 80,00,000	Rs. 24,00,000
No. of equity shares	16,00,000	4,00,000
Market value per share	Rs. 200	Rs. 160

- a) If the merger goes through and the exchange ratio is based on current market prices, what is the new EPS for M Ltd.?
- b) N Ltd. wants to make sure that the earnings available to its shareholders will not be diminished by the merger, what should be the exchange ratio then?

Solution

- a) If the exchange ratio is based on market prices it is 200 / 160 that is, for every 5 shares of N Ltd, the target shareholders would receive 4 shares of M Ltd.

Hence, for 4,00,000 shares in N Ltd, they will receive $4 / 5 \times 4,00,000$ shares in M Ltd., that is 3,20,000 shares.

Hence, the new EPS of M Ltd. is as under

	Combined PAT	1,04,00,000
	NOS	19,20,000
	Revised EPS	5.42

- b) Current EPS of N Ltd. is 24,00,000 / 4, that is 6.

If the merger has to happen in a manner that the EPS is unimpacted, it should be in the ratio of EPS.

	M Ltd	N Ltd
PAT	80,00,000	24,00,000
NOS	16,00,000	4,00,000
EPS	5	6

Now, this means that for every 5 shares in N Ltd., the shareholders should receive 6 shares in M Ltd., i.e. $6/5 \times 4,00,000$, that is 4,80,000 shares.

	Combined PAT	1,04,00,000
	NOS	20,80,000
	Revised EPS	5.00

You can now observe that for M Ltd., the EPS is now unchanged, even post-merger.

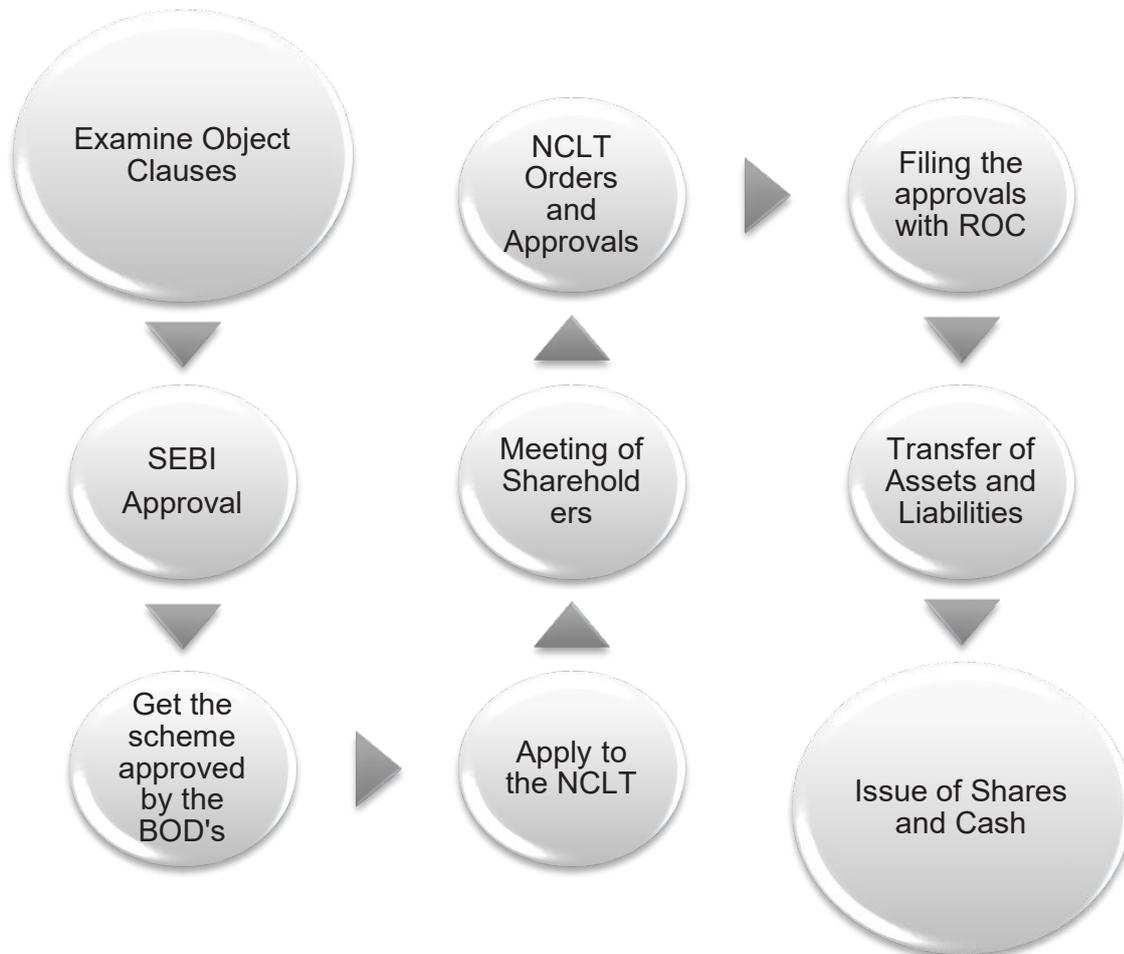
For the shareholders of N Ltd., the revised earnings would be $4,80,000 \times 5$, which is Rs 24,00,000, which is the same as before.

Hence, if N Ltd. wants to make sure that the earnings available to the shareholders will not be diminished by the merger, the exchange ratio should be based on EPS and not MPS.

THE LEGAL PROCEDURES

The various provisions of Companies Act, 2013 and Income Tax Act, 1961 need to be kept in mind when planning M&A's.

The legal procedures are depicted in the diagram below.



(1) **SEBI Circular No. CFD/DIL3/CIR/2017/26 dated 23 March 2017 read with CFD/DIL3/CIR/2018/2 (Amendment):** This circular was made applicable to all listed entities who have listed their equity and convertibles and all the recognised stock exchanges.

This circular is with reference to SEBI Circular No. CFD/DIL3/CIR/2017/21 dated March 10, 2017 (for details, please refer https://www.sebi.gov.in/legal/circulars/mar-2017/circular-on-schemes-of-arrangement-by-listed-entities-and-ii-relaxation-under-sub-rule-7-of-rule-19-of-the-securities-contracts-regulation-rules-1957_34352.html).

Para 8 of the aforesaid circular provides that the pricing provisions of Chapter VII of SEBI (Issue of Capital and Disclosure Requirements) Regulations, 2009 shall be followed in case of issuance of shares to a select group of shareholders or shareholders of unlisted companies pursuant to such schemes. It is now clarified that the 'relevant date' for the purpose of computing pricing shall be the date of Board meeting in which the scheme is approved.

The Stock Exchanges have been advised to bring the provisions of this circular to the notice of Listed Entities and also to disseminate the same on their website.

This circular is issued under Section 11 of the SEBI Act, 1992 and regulations 11, 37 and 94 read with regulation 101(2) of SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015 and Rule 19(7) of Securities Contracts (Regulation) Rules, 1957.

Further, the following critical amendments covered under CFD/DIL3/CIR/2018/2 are also to be focused upon.

In view of the representations received suggesting improvements to the existing regulatory framework governing scheme of arrangement. With the view to expedite the processing of draft schemes and to avoid misuse of schemes to bypass regulatory requirements, a decision was taken to make certain amendments to the Circular No. CFD/DIL3/CIR/2017/21 dated March 10, 2017.

- i) **Amendment to Para 7:** Para 7 of the circular shall be replaced with the following: “7. The Provisions of this circular shall not apply to schemes which solely provides for merger of a wholly owned subsidiary or its division with the parent company. However, such draft schemes shall be filed with the Stock Exchanges for the purpose of disclosures and the Stock Exchanges shall disseminate the scheme documents on their websites.”
- ii) **Insertion of Para (I)(A)(2A) :** Following Para shall be inserted after Para (I)(A)(2) of Annexure I to the circular: “The valuation report referred to in Para 2(b) above and the Fairness opinion referred to in Para 2(d) above shall be provided by Independent Chartered Accountant and Independent SEBI Registered Merchant Banker respectively. The chartered accountant and the merchant banker referred herein shall not be treated as independent in case of existence of any material conflict of interest among themselves or with the company, including that of common directorships or partnerships.”
- iii) **Amendment to Para(I)(A)(3)(b) :** Para (I)(A)(3)(b) of Annexure I of the circular shall be replaced with the following: “The percentage of shareholding of pre-scheme public shareholders of the listed entity and the Qualified Institutional Buyers (QIBs) of the unlisted entity, in the post scheme shareholding pattern of the “merged” company on a fully diluted basis shall not be less than 25%.”
- iv) **Deletion of Para (II) :** Para (II) of Annexure I to the circular shall stand repealed.
- v) **Amendment to Para(III)(A)(3) :** Para (III)(A)(3) of Annexure I of the circular shall be replaced with the following: “3. In case of a scheme involving merger of a listed company or its division into an unlisted entity, the entire pre-scheme share capital of the unlisted issuer seeking listing shall be locked in as follows:
 - (a) Shares held by Promoters up to the extent of twenty percent of the post merger paid-up capital of the unlisted issuer, shall be locked-in for a period of three years from the date of listing of the shares of the unlisted issuer;
 - (b) The remaining shares shall be locked-in for a period of one year from the date of listing of the shares of the unlisted issuer.
 - (c) No additional lock-in shall be applicable if the post scheme shareholding pattern of the unlisted entity is exactly similar to the shareholding pattern of the listed entity.

Provided that the shares locked-in under this clause may be pledged with any scheduled commercial bank or public financial institution as collateral security for loan granted by such bank or institution if pledge of shares is one of the terms of sanction of the loan;

Provided further that the shares locked-in under this clause may be transferred ‘inter-se’ among promoters in accordance with the conditions specified under Regulation 40 of ICDR Regulations.

Provided further that shares presently under lock-in as per the provisions of earlier circulars shall also be governed by the provisions of this clause”

- vi) **Deletion of Para (III)(A)(4)** : Para (III)(A)(4) of Annexure I to the circular shall stand repealed.
- vii) **Amendment to Para(III)(A)(5)** : Para (III)(A)(5) of Annexure I of the circular shall be replaced with the following: “5. It shall be ensured that steps for listing of specified securities are completed and trading in securities commences within sixty days of receipt of the order of the Hon’ble High Court/ NCLT, simultaneously on all the Stock Exchanges where the equity shares of the listed entity (or transferor entity) are/were listed. Before commencement of trading, the transferee entity shall give an advertisement in one English and one Hindi newspaper with nationwide circulation and one regional newspaper with wide circulation at the place where the registered office of the transferee entity is situated, giving following details:”

(2) **NSE Circular No. NSE / CML /2017/12 dated 1.6.2017** : This circular of NSE Ltd. deals with valuation report on Scheme of Arrangement. As advised by SEBI, with respect to the schemes, which are pending with SEBI/ Stock Exchanges as well as fresh schemes which will be filed hereafter, the valuation report shall display the workings, relative fair value per share and fair share exchange ratio in the following manner:

Computation of Fair Share Exchange Ratio :

Valuation Approach	XYZ Ltd.		PQR Ltd.	
	Value per Share	Weight	Value per Share	Weight
Asset Approach	x	a	y	d
Income Approach	x	b	y	e
Market Approach	x	c	y	F
Relative value per share	x		y	
Exchange Ratio (rounded off)			xx	

Ratio:

“x (xxx) equity share of XYZ Ltd of INR 10 each fully paid up for every y (yyy) equity shares of PQR Ltd of INR 10 each fully paid up.”

(3) **BSE Circular No. List / COMP /02/2017-18 dated 29.5.2017** : This circular of BSE Ltd. deals with the valuation report on Scheme of Arrangement. As advised by SEBI with reference to the schemes, which are pending with SEBI / Stock Exchanges as well as fresh schemes will be filed hereafter, the valuation report shall display the workings, relative fair value per share and fair share exchange ratio in the following manner:

Computation of Fair Share Exchange Ratio

Valuation Approach	XYZ Ltd.		PQR Ltd.	
	Value per Share	Weight	Value per Share	Weight
Asset Approach	x	a	y	d
Income Approach	x	b	y	e
Market Approach	x	c	y	F
Relative value per share	x		y	
Exchange Ratio (rounded off)			xx	

Ratio:

“x (xxx) equity share of XYZ Ltd of INR 10 each fully paid up for every y (yyy) equity shares of PQR Ltd of INR 10 each fully paid up.”

Case Study

One of the major challenges in any M&A process is the integration of systems, and more importantly, of people and cultures.

A good deal on paper can easily fall flat through the cracks that develop post marriage of the Companies involved.

The views of the shareholders and creditors of the company need to be carefully understood and taken cognizance of.

For instance, in the JLR acquisition by Tata Motors, consider the following statements:

Before the agreement:

Job security of Jaguar Land Rover (JLR) employees and the fate of manufacturing facilities in the UK should be at the heart of future discussions, or Unite, Britain’s largest trade union, will not support or accept Ford’s intention to sell or transfer the company.

This was the message from Mr. Tony Woodley, Unite’s Joint General Secretary, coming close on heels of Ford’s announcement that it was entering into focused negotiations with the Tatas over the sale of its iconic brands Jaguar and Land Rover.

“We need further and more detailed meetings and discussions with Ford and Tata which will focus on the job security of our members in the Jaguar Land Rover and Ford plants in the UK,” he said, after workforce were informed of Ford’s intentions.

After finalisation of the deal the Tatas have agreed to leave untouched the terms of employment for the British workforce of approximately 16,000 employees.

“The parties do not anticipate any significant changes to Jaguar Land Rover employees’ terms of employment on completion,” said the Tata statement.

“We had a discussion with the pension trustees, and the pension regulator in the UK and we have their confidence and approval for the transactions,” said an official.

This can tell you the seriousness of how meticulously the M&A’s need to be planned, particularly from a human capital (people) aspect.

SUMMARY

1. MA’s are complex transactions and the process not only involves the acquiring and target companies but also a variety of other stakeholders, including regulatory agencies
2. There are a couple of fundamental questions to be asked at the outset
 - a. Will the transaction / deal create value?
 - b. Does the acquisition price out-weigh the potential benefits?
3. An acquisition generally represents acquiring a portion of one company by another or getting controlling stakes in the company. A merger represents the absorption of one entity by the other where only one entity survives
4. Mergers can take any one of the following forms

- a. Statutory Merger - where one company is merged in to another
 - b. Subsidiary Merger - where the target becomes the subsidiary of the acquirer
 - c. Consolidation - where both acquirer and target become part of one resultant company
5. Mergers could also be categorised as
- a. Horizontal - among peer companies in the same line of business
 - b. Vertical - among companies along the value chain
 - c. Conglomerates - formed by companies in unrelated businesses
6. The motives for M&A's could be varied
- a. Synergy
 - b. Growth
 - c. Market Power
 - d. Acquisition of unique capabilities and resources
 - e. Diversification
 - f. Increased earnings
 - g. Tax considerations
7. An M&A deal could take the form of
- a. Stock Purchase
 - b. Asset Purchase
8. The method of payment in acquiring controlling stakes could be
- a. Cash
 - b. Stock
 - c. A combination of Cash and Stock
9. Mergers could be friendly or hostile and when hostile could be subject to pre and post-takeover defences
10. Examples of pre-takeover defences
- a. Poison Pills and Puts
 - b. Restricted Voting Rights
 - c. Golden Parachutes
11. Example of post-takeover defences
- a. Share Repurchases
 - b. Leveraged Buy-outs
 - c. White knight defence
12. Three major tools and techniques for valuing a target company are
- a. Discounted Cash Flow Analysis
 - b. Comparable Company Analysis
 - c. Comparable Transaction Analysis

13. The equation of valuation takes the following shape; $VC = VA + VT + S - C$
14. The Exchange Ratio could be built upon the following pre-merger stats
 - a. Based on Market Prices
 - b. Based on EPS
15. Empirical evidence suggests that merger transactions create value for target company shareholders. Acquirers, on the other hand, tend to accrue and imbibe value in the years following the merger.

SELF TEST QUESTIONS

1. The Hubris theory suggests that the value pre and post-merger remains the same substantially
 - a. True
 - b. False
2. Pac-man defence is a ----- takeover defence
 - a. Pre
 - b. Post
 - c. Both
 - d. None of the above
3. If the Exchange Ratio is based on the pre-merger -----, the earnings available to shareholders post the merger remain the same
 - a. MPS
 - b. EPS
 - c. Book Values
 - d. None of the above
4. Winners' curse is a phenomenon that connotes the possibilities of the acquirer having to ----- in order to emerge winner and there is a tendency to grab the deal amongst competitive bidding
 - a. Overpay
 - b. Underpay
 - c. Settle
 - d. Litigate
5. Synergy is said to be derived when the value of the combined entity as a result of the merger is ----- than the sum of the values of the entities before the merger
 - a. Greater
 - b. Lesser

Practical Illustrations

1. X Ltd. is intending to acquire B Ltd. (by merger) and the following information is available in respect of the companies.

<i>Particulars</i>	<i>X Ltd.</i>	<i>B Ltd.</i>
No. of Equity Shares	5,00,000	3,00,000
Earnings after tax (Rs.)	25,00,000	9,00,000
Market value per share (Rs.)	21	14

- (i) What is the present EPS of both the companies?
- (ii) If the proposed merger takes place, what would be the new earning per share for X Ltd. (assuming that the merger takes place by exchange of equity shares and the exchange ratio is based on the current market prices).
- (iii) What should be exchange ratio, if B Ltd. want to ensure the same earnings to members as before the merger takes place?

2. East Co. Ltd. is studying the possible acquisition of West Co Ltd. by way of merger. The following data is available

<i>Particulars</i>	<i>East Co. Ltd.</i>	<i>West Co. Ltd.</i>
Earnings after tax (Rs.)	2,00,000	60,000
No. of equity shares	40,000	10,000
Market value per share (Rs.)	15	12

- (i) If the merger goes through by exchange of equity share and the exchange ratio is based on the current market price, what is the new earnings per share for East Co. Ltd.?
- (ii) West Co. Ltd. wants to be sure that the earnings available to its shareholders will not be diminished by the merger. What should be the exchange ratio in that case?

Descriptive Questions

1. Briefly describe the procedure around any M&A deal and the typical challenges that could be anticipated?
2. Build a practical situation wherein one Company intends to acquire the other. Explain each of the following scenarios by way of a practical illustration?
 - a. Payment of consideration by Cash
 - b. Payment of consideration by Stock
 - c. Payment of consideration, partly by Cash and partly by Stock
3. Explain by a diagram and a paragraph, the various steps around
 - a. A Friendly Merger
 - b. A Hostile Merger
4. Explain the concept of Bootstrapping with a practical example?

5. Explain in detail Porter's 3 tests in creation of value in M&A Deals?
6. What are the operational synergies? Explain each of the operational synergies in detail.
7. What are financial synergies and how are such synergies realised by a firm?
8. Explore the concept of acquiring undervalued firms.

LIST OF FURTHER READINGS

1. Mergers & Acquisitions and Corporate Valuation- An Excel Based Approach by Dr.Manu Sharma, published by Dreamtech press.
2. Mergers, Acquisitions, and Corporate Restructurings by Patrick A Gaughan, published by Wiley.
3. Mergers, Acquisitions, and Other Restructuring Activities by Donald M. DePamphilis, published by AP.
4. Mergers and Acquisitions by Rajinder S Arora, Kavita Shetty and Sharad Kale, published by Oxford University Press.
5. Asset Class: Securities or Financial Assets, published by Registered Valuers Organisation

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 16. "Asset Purchase vs Stock Purchase", Retrieved from <https://corporatefinanceinstitute.com/resources/knowledge/deals/asset-purchase-vs-stock-purchase/>
 17. Schwert William G. (2000). "Hostility in Takeovers: In the Eyes of the Beholder?", Retrieved from <http://schwert.ssb.rochester.edu/hostile.pdf>
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Lesson 11

Valuation of Various Magnitudes of Business Organizations

LESSON OUTLINE

- Introduction
- Context of Valuation
- Corporate Valuation in Practice(AS)
- Approaches to Valuation
- Valuation of Large companies
- Valuation of Small companies
- Valuation of Micro, Small and Medium size companies (MSME)
- Valuation of Startups
- SUMMARY
- SELF TEST QUESTIONS

LEARNING OBJECTIVES

In today's business environment, different prospective buyers are likely to assign different values to the same company, depending on their method of computation. The word 'value' means different things to different people and it can be tangible or intangible. Knowing the value and what determines the value is a prerequisite for intelligent decision making. Therefore, the ability to value a company accurately is essential for a wide variety of professionals.

In applying the basic principles and methods of corporate valuation to different kinds of companies their individual characteristics are to be taken into account. Valuing a multi-business company, for example, is difficult than valuing a single business company because of the differences in characteristics of the businesses. Apart from the nature of operations of the company, the context, in which the valuation is done, is also important. Similarly, valuation of a private company tends, in some ways, to be more complex than the valuation of a public company.

The aim of this lesson is to highlight the unique issues that arise in valuing companies of different kinds and valuing companies in different contexts and enable the students to estimate the value of Large Companies, Start-Ups, Micro Small and Medium Enterprises using various methods and techniques.

ORIENTATION

This lesson requires an expert level knowledge in order to develop deep insights pertaining to the valuation of varying magnitudes of business organizations, i.e. large scale companies, start-ups, small companies etc. In today's business environment which is characterized by business organizations having different scales of operations and valuation being a pervasive concept, an intensive knowledge on crucial facets / elements pertaining to valuation of various magnitudes of organizations is a must.

FAMILY TREE OF CONCEPTS



INTRODUCTION

Post economic sector reforms, profound changes have taken place in the economic and business environment. The pace of growth has been marvelous and as such the companies are now relying more on private equity and capital markets for their capital requirement. While mergers, acquisitions and restructuring are becoming a commonplace, strategic alliances are gaining more popularity. PSUs are divesting their shares, employee stock option plans are burgeoning and regulatory bodies are stressed with determination of the tariffs. Business valuation is the key issue in all such decisions.

Value is the estimation of the 'worth' of a thing. It can also be defined as 'a bundle of benefits' expected from it which can be tangible or intangible. There are different types of Values:

1. Original Value
2. Book Value
3. Depreciated Value
4. Sale Value

5. Purchase Value
6. Replacement Value
7. Market Value
8. Economic Value
9. Residual Value
10. Disposal Value/Scrap Value.

Value can be estimated, assessed, or determined by a professional called 'Valuer'. The process of determining the value is called 'Valuation'. Thus, Valuation is estimation, by a professional valuer, of a thing's worth.

'Business Valuation' is the process of determining the economic value of a business. It is the act or process of determining the value of a business enterprise or ownership interest therein. It involves a number of factors ranging from financial matters to historical perspectives.

Valuer

The Companies (Registered Valuers and Valuation) Rules, 2017 (Rules), provide for Registration of Valuers for conduct of valuation under the Companies Act, 2013. The valuers, who may be individuals or partnership entities or companies, would be required to be registered with the authority specified by the Central Government. The Rules provide for registration of different category of valuers and lay down the requirements on their eligibility, qualifications and experience. The Registered Valuers are also required to be members of the Registered Valuers Organisations (RVOs), recognised by the authority under the Rules. The term *valuer* also includes a *valuer* undertaking valuation engagement under other Statutes like Income Tax, SEBI, FEMA, RBI etc.

Purpose of Valuation

Value is wanted to be known in a commercial context for the purpose of a transaction of 'buy or sell' or to know the 'worth' of a possession. Valuations of businesses, business ownership interests may be performed for a wide variety of purposes including the following (as listed by ICAI):

- (a) Valuation of financial transactions such as acquisitions, mergers, leveraged buyouts, initial public offerings, employee stock ownership plans (ESOPs) and other share-based plans, partner and shareholder buy-ins or buy-outs, and stock redemptions;
- (b) Valuation for dispute resolution and/ or litigation/pending litigation relating to matters such as marital dissolution, bankruptcy, contractual disputes, owner disputes, dissenting shareholder and minority ownership oppression cases, employment disputes, etc;
- (c) Valuation for compliance oriented engagements, for example:
 - (i) Financial reporting; and
 - (ii) Tax matters such as corporate reorganizations, purchase price allocations etc.
- (d) Valuation for other purposes like the valuation for planning, internal use by the owners etc;
- (e) Valuation under Insolvency and Bankruptcy Code.
- (f) Valuation for the stake to be divested by public sector undertakings (PSUs).

INDIAN VALUATION STANDARDS 2018

Valuation field is gaining importance now and is considered as one of the most critical areas in finance and it plays a key role in many areas of finance such as buy/sell, solvency, merger and acquisition. It also plays a significant role in the Insolvency Resolution regime where Liquidation value has to be determined by Resolution

professional through the Registered Valuers. Analysts use a wide range of models, ranging from the simple to the complex to value business organizations of varying magnitudes.

Identifying the need to have the consistent, uniform and transparent valuation policies and harmonise the diverse practices in use in India the Institute of Chartered Accountants of India has constituted Valuation Standards Board in the year 2017-18. The Valuation Standards Board has been constituted to focus on the release of *Indian Valuation Standards*, providing Interpretations, Guidance and Technical Materials from time to time and implementation of the Standards.

The new Valuation Rules under section 247 of the Companies Act, 2013, for valuation of business in India and specific provisions under the Insolvency and Bankruptcy Code, 2016 requires valuation report from a registered valuer, Registered valuer under the SEBI (REIT and InvIT) Regulations, 2016 as well as the SEBI (Substantial Acquisition and Takeovers) Regulations, 2015, SEBI (Issue of Sweat Equity) Regulations, 2002 and also the income tax requirements.

Valuation Standard 103 provides guidance on use of various valuation approaches and methods. This standard shall be applied by the valuers of the RVOs in selecting the appropriate valuation approaches and methodologies in determining the value of an asset, liability or a business. Usage of multiple approaches and methods is also guided by the standard.

These Indian Valuation Standards will be effective till Valuation Standards are notified by the central Government under Rule 18 of the Companies (Registered Valuers and Valuation) Rules, 2018.

Valuation Approaches and Methods

The following are the three main valuation approaches that are adopted commonly to perform the business valuation in correlation with the valuation approaches and methodologies prescribed under Indian Valuation Standard 103.

- (a) Market approach;
- (b) Income approach; and
- (c) Cost approach.

A *valuer* shall select and apply appropriate valuation approaches, methods and procedures to the extent, relevant for the engagement. The requirements of the Indian Valuation Standards 2018 shall be followed consistently in addition to the requirements as contained in Indian Valuation Standard 103 while selecting and applying the valuation approach.

Market approach

Market approach is a valuation approach that uses prices and other relevant information generated by market transactions involving identical or comparable (i.e., similar) assets, liabilities or a group of assets and liabilities, such as a business. The following are the common methodologies for the market approach:

- (a) Market Price Method;
- (b) Comparable Companies Multiple Method; and
- (c) Comparable Transaction Multiple Method.

Income approach

Income approach is the valuation approach that converts maintainable or future amounts (e.g., cash flows or income and expenses) to a single current (i.e. discounted or capitalized) amount. The fair value measurement is determined on the basis of the value indicated by current market expectations about those future amounts.

The most commonly used income approach is Discounted Cash Flow (DCF) Model.

Cost approach

Cost approach is a valuation approach that reflects the amount that would be required currently to replace the service capacity of an asset (often referred to as current replacement cost).

The following are the commonly used valuation methods under the cost approach:

- (a) Replacement Cost Method; and
- (b) Reproduction Cost Method.

A valuer shall select and apply appropriate valuation approaches, methods and procedures to the extent relevant for the engagement. Either or a combination of the above methods are followed by the valuer based on the purpose or objective of valuation - sale or purchase of business, merger, acquisitions, IPO, funding, financial reporting to the regulatory etc. Also the attractiveness of methods goes through cycles and the method usage depends on preferences of the valuers' clients.

VALUATION OF VARIOUS MAGNITUDES OF BUSINESS ORGANIZATIONS

For larger enterprises, business valuers generally use the future earnings model. Though unpredictable, future performance is a key concern for buyers. The model presents challenges for appraisers, as they must forecast many variables about future profits. Though different assumptions are made by these models about the bases that determine value, they do share some common features and can be classified in wider terms. In general, there are three approaches to valuation.

- o *Discounted Cash flow valuation*
- o *Relative valuation method*
- o *Contingent claim valuation*

Discounted Cash Flow valuation

The method involves forecasting future cash flows and discounting the same to the present point of time using a cost of capital that replicates the firm's capital structure and business risk. It relates the value of an asset to the present value of expected future cash flows on that asset.

There are several methods of DCF valuation:

Enterprise DCF model: The method values the entire business, with both assets in place (investments already made) and growth assets (investments yet to be made). The cash flows before debt payments and after re-investment needs are called *free cash flows* to the firm (FCFFs). The discount rate that reflects the composite cost of financing from all sources of capital is called the cost of capital (WACC). WACC-based models work best when a company maintains a relatively stable debt-to-value ratio. If a company's debt-to-value ratio is expected to change, WACC-based models can still yield accurate results but are more difficult to apply.

Value of the firm = Present value of cash flow during an explicit forecast period + Present value of cash flow after the explicit forecast period

Equity DCF model: The method values the equity stake in the business and is known as equity valuation. The cash flows before debt payments and after re-investment needs are called *free cash flows* to the equity (FCFs). The discount rate reflects only the cost of equity financing.

There are two variants of the equity DCF model:

The dividend discount model: The model involves forecasting the future dividends and discounting the same at

the cost of equity. In sectors where cash flow estimation is challenging or impossible dividends are the only cash flows that can be estimated with any degree of accuracy. Estimation of capital expenditures and working capital is difficult for the companies whose primary asset is human capital. Financial services companies like banks, insurance companies and investment banks can be evaluated using dividend discount models.

Free cash flow to equity (FCFE)

Another model known as the free cash flow equity model involves forecasting the free cash flow to equity (FCFE). It represents a model where potential or future dividends are discounted rather than actual dividends. The FCFE model can be used to evaluate publicly traded firms and assumes that there is strong corporate governance system in practice in the company. Similar to dividend discount model, there are variations in the FCFE model that revolve around assumptions about future growth and reinvestment needs.

There are two variants of the FCFE model:

Constant growth FCFE model: The model is designed to value those firms that are growing at a stable rate and therefore in a steady state. The value of equity under this model is a function of the expected FCFE in the next period, stable growth rate and the required rate of return.

Two-stage FCFE model: The model is designed to value a firm that is expected to grow much faster than a mature firm in the initial period and at a stable rate after that.

Growth Models

Gordon growth model values stock in a stable-growth firm that pays out the shareholders in the form of dividends. The usage of the model is limited to the firms that are growing at a stable rate and at a rate comparable to or lower than the growth rate in the economy. The stable growth rate cannot be more than 0.25 percent to 0.5 percent above the economy growth rate. If the gap between the stable growth rate and growth rate in the economy becomes larger, than using a two-stage or three-stage model to capture the 'supernormal' or 'above-average' growth would be more appropriate.

A two-stage dividend discount model is based on two clearly defined growth stages-high growth and stable growth. It is used when the expected earnings growth rate of the company is superior to the growth rate of the economy. The model is used to value the companies which maintain high growth for a specific time period and the sources of such high growth tend to disappear after some time. The value of a sector or a market can also be estimated using this model.

Company which has patent rights to money-making commercial products for the next few years and is anticipated to enjoy supernormal growth during this period can be valued using two-stage model. Once the patent expires, it is expected to settle back into stable growth. The model is also suitable to a firm in an industry which is enjoying super normal growth because of the barriers to entry (either legal or infrastructure requirements).

H-Model for valuing growth is a two-stage model for growth in a situation in which the growth rate in the initial growth phase is not stable but declines linearly over time to reach the stable growth rate in stable stage. As growth rate declines over the period the pay-out usually increases.

In practice, the model which requires a combination of high growth and high payout has limited applicability. The model is used to value companies in the banking sector which are characterized by high growth rate and high payout.

Three-Stage dividend discount model is the combination of the features of the two-stage model and the H-model. The model adopts an initial phase of constant high growth, a second phase of declining growth and a third phase of stable low growth that lasts forever. No restrictions on the payout ratio are imposed by the model. The model is suitable for banking companies characterized by high growth initially, followed by declining growth due to competition and lastly maintains a stable low growth because of its nature of business and ownership, specifically the public sector banks in India.

Adjusted present value (APV) model: In case, where a company's debt-to-value ratio is expected to change adjusted present value (APV) is used as alternative to WACC-based models to get accurate value. APV specifically forecasts and values any cash flows associated with capital structure separately, rather than inserting their value in the cost of capital.

$$\text{Enterprise Value} = \text{Value of the unlevered equity free cash flow} + \text{Value of the financing side effects}$$

$$\text{Enterprise Value} = \text{Current invested capital} + \text{Present value of the future economic profit stream}$$

The equity free cash flow of the unlevered firm is same as the free cash flow to the firm. It is discounted at the cost of unlevered equity. For computing the present value the borrowing rate of the firm is used.

Economic profit model: Because of its close link to economic theory and competitive strategy, the discounted economic-profit valuation model is attaining the popularity. Economic profit shows whether a company is earning its cost of capital and how its financial performance is anticipated to change over time. The two models enterprise DCF model and economic profit model yield identical results and have different but complementary benefits. Creating both enterprise DCF and economic-profit models when valuing a company results in accurate value.

$$\text{Enterprise Value} = \text{Current Invested capital} + \text{Present value of the future economic stream.}$$

$$\text{Economic Profit} = \text{Invested Capital (ROIC – WACC) ,Where ROIC = Return on Invested Capital}$$

Economic profit highlights whether a company is earning its cost of capital and how its financial performance is expected to change over time. The two models enterprise DCF model and economic profit model yield identical results and have different but complementary benefits. It is recommended to create both enterprise DCF and economic-profit models when valuing a company.

Framework for DCF-Based Valuation

Model	Measure	Discount Factor	Assessment
Enterprises discounted cash flow	Free Cash Flow	Weighted Average Cost of Capital	Works best for projects, business units, and companies that manage their capital structure to a target level
Discounted Economic Profit	Economic Profit	Weighted Average Cost of Capital	Explicitly highlights when a company creates value
Adjusted present value	Free Cash Flow	Unlevered Cost of Equity	Highlights changing capital structure more easily than WACC-based models.
Capital cash flow	Capital cash flow	Unlevered cost of equity	Compress free cash flow and the interest tax shield in one number, making it difficult to compare operating performance among companies and over time.
Equity cash flow	Cash flow to equity	Levered cost of equity	Difficult to implement correctly because capital structure is embedded within the cash flow. But used when valuing financial institutions.

Source: Tim Koller, Marc Goedhart & David Wessels, *Valuation: Measuring and Managing the Value of companies*, fifth edition, 2010,McKensey and Company

Enterprise DCF remains as a favorite of practitioners and academics because it relies solely on the flow of cash in and out of the company, rather than on accounting-based earnings. Traditionally, book value approach

and relative valuation approaches were used more commonly. From the early, 1990s , however, the DCF approach in particular , the enterprise DCF model- has received larger attention, emphasis and acceptance. The conceptual superiority and strong endorsement of the method by leading consultancy organizations like McKinsey and Company made it more popular.

STEPS IN VALUATION OF A FIRM

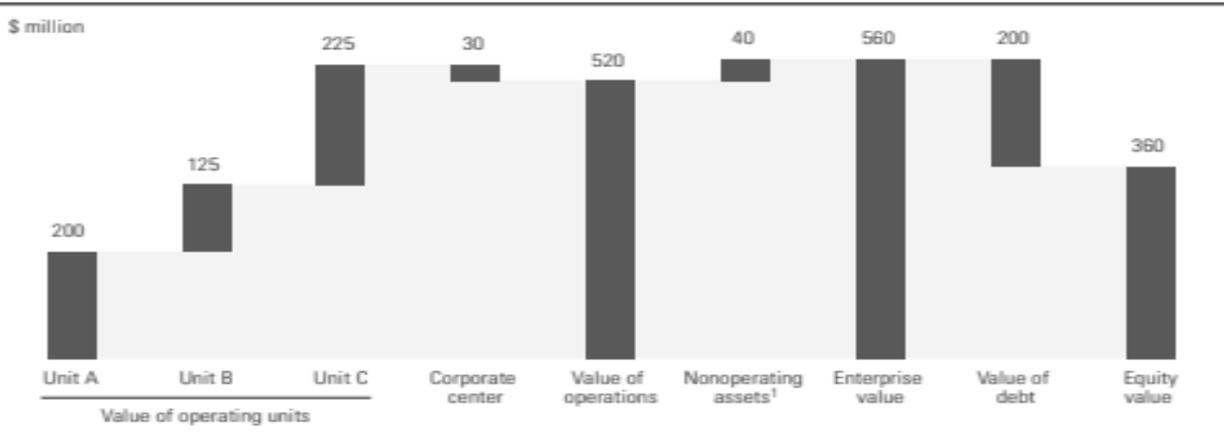
Valuing a firm using the DCF approach requires forecasting cash flows over an indefinite period of time for an entity that is projected to grow. The steps in the estimation of a company’s common equity using enterprise DCF are as follows:

1. Value the company’s operations by discounting free cash flow at WACC.
2. Identify and value non-operating assets, such as excess marketable securities, nonconsolidated subsidiaries, and other equity investments. Totaling the value of operations and non-operating assets gives enterprise value.
3. Identify and value all debt and other non-equity claims against the enterprise value. Debt and other non-equity claims include (among others) fixed-rate and floating-rate debt, unfunded pension liabilities, employee options, and preferred stock.
4. Subtract the value of non-equity financial claims from enterprise value to arrive at the value of common equity. Finally, equity value is divided by the number of current shares outstanding to estimate price per share.

Valuation of a Multi business company

The enterprise DCF method is especially useful when applied to a multi business company which is characterized by large size. The enterprise value of a multi business company equals the total value of the individual operating units less the present value of the corporate center costs, plus the value of non-operating assets. If enterprise discounted cash flow model is used instead of the equity cash flow model, the individual projects, business units, and even the entire company can be can be evaluated with a consistent methodology. Further, when using equity cash flow method if obtaining matching equity cash flows with the correct cost of equity is challenging the enterprise is valued first and then the value of any non-equity financial claims is subtracted.

EXHIBIT 6.3 Enterprise Valuation of a Multibusiness Company



¹ Including excess cash and marketable securities.

Source: Tim Koller, Marc Goedhart& David Wessels, *Valuation: Measuring and Managing the Value of companies*, fifth edition, 2010,McKensey and Company

Relative Valuation Method

The method estimates the value of an asset by observing the price of comparable assets relative to a common variable like earnings, cash flows, book value or sales. Use of relative valuation to value firms in any sector and size (large to small) is wide spread among the valuers as the method is easier to understand, explain and is easier to compute than DCF model. The method requires less information than DCF valuations and is less time-intensive alternative. For most relative valuation metrics the conceptual foundation is provided by DCF approach.

Relative valuation methods use multiples or ratios, such as price/earnings, price/book, or price/free cash flow, to conclude whether a particular firm is trading at higher or lower multiples than its peers. These methods require the user to choose an appropriate universe of firms that are more or less comparable. But valuation of firms with uncommon characteristics in terms of product mix or geographical exposure using multiples can become difficult because of the availability of suitable firm.

DCF techniques are common in acquisitions of businesses and corporate finance. But research suggests that almost every acquisition is supported by a discounted cash flow valuation. The value paid in acquisition is often calculated using a multiple. Terminal values in DCF valuation of are also computed using multiples.

Steps involved in Relative Valuation:

- Analyse the subject company
- Select comparable companies
- Choose the valuation multiple(s)
- Calculate the valuation multiples for the comparable companies
- Value the subject company.

Equity Valuation Multiples

The value of equity of a firm is estimated using the equity valuation multiples. The commonly used equity valuation multiples are Price-to-earnings (P/E) multiple, price-to-book value (P/B) multiple and price-to-sales (P/S) multiple. It is the most popular valuation measure.

Enterprise Valuation Multiples

The value of the enterprise (firm) is found using enterprise valuation multiples. The enterprise value is usually related to measure of earnings, assets or sales. The commonly used enterprise value multiples are EV/EBITDA multiple, EV/EBIT multiple, EV/FCFF multiple, EV/BV multiple and EV/Sales multiple.

Using best multiple

For most analyses, enterprise value to EBITA is the best multiple for comparing valuations across companies. In selecting the multiples the analyst can accept the multiple that reflects his bias, or use all the multiples or pick the 'best' multiple. Four factors that drive the EV-to-EBITA multiple are the company's growth rate, its return on invested capital, the operating tax rate, and the cost of capital.

When calculating and comparing industry multiples, always start with EV to EBITA. It communicates more about a company's value than any other multiple. When domestic companies in the same industry are analyzed, the factors such as the tax rate and cost of capital will be similar across peers and improves comparability. Conversely, growth and ROIC repeatedly differ across companies, so all the multiples need not be identical across industry.

According to Péter Harbula, below, are the most relevant valuation multiples, depending on the industry of which

the company being valued is operating in (Harbula, 2009).

- Real estate: Price-to-book, Price-to-earnings
- Building materials: Enterprise-to-EBITDA
- Banking and insurance: Price-to-book, Price-to-earnings
- Food and beverages: Enterprise-to-EBITDA, Price-to-earnings
- Services: Enterprise-to-EBIT, Price-to-earnings
- Energy: Enterprise-to-EBITDA, Enterprise-to-IC1
- Technology: Enterprise-to-EBITDA, Enterprise-to-EBIT
- Telecommunications: Enterprise-to-EBITDA, Price-to-earnings
- Distribution: Enterprise-to-EBITDA, Enterprise-to-EBIT
- Manufacturing: Enterprise-to-EBITDA, Price-to-FCF2
- Construction: Enterprise-to-EBITDA, Price-to-earnings
- Life sciences / healthcare: Enterprise-to-sales, Enterprise-to-EBITDA
- Capital goods: Enterprise-to-EBITDA, Enterprise-to-EBIT
- Media: Enterprise-to-EBITDA, Enterprise-to-EBIT (Harbula, 2009)
- Software : Price-to-earnings

Contingent Claims Valuation Approach

Valuation based on DCF approach understates the value of assets as these methods do not consider the value of managerial flexibility. 'Flexibility' refers to the choices between alternative plans that managers may make in response to events.

In real life scenario, the managers adjust their plans and strategies as reaction to changes in the economic environment. This flexibility has value which cannot be captured by a single forecast or even an analysis of multiple scenarios. Flexibility (or options) occurs generally at the level of individual project or business. So flexibility can be valued in the context of individual project or business instead of incorporating in a corporate-wide valuation model.

Contingent claims model of valuation uses option pricing models to measure the value of assets that share option features. The options embedded in the real projects are classified into four broad types. They are Investment timing options, growth options, flexibility options and exit options. In addition to the options that naturally exist in many projects, managers can include flexibility in designing the project.

The options designed by the managers can be in the form of input flexibility options and output flexibility options. An input flexibility option permits a firm to switch between alternative inputs. An Electric power plant, for example, may go for flexible dual-fuel boiler which can shift between gas and oil as fuel, contingent on which resource of energy is cheaper at a given point of time.

On the other hand, output flexibility permits a firm to change the product mix. For example, Oil refineries are typically designed with output flexibility that allows them to switch from one product mix to another, depending on the profitability of the product mix at that point of time. As a result there should be an adjustment of option premium to the DCF value of the Oil refinery. It is this premium on value that makes real options so attractive and so possibly dangerous.

Company-wide valuation models rarely take flexibility into account. A bio technology firm, for example, with a

single promising patent for a blockbuster cancer drug proceeding its way through Food and Drug Administration (FDA) cannot be easily valued using DCF or relative valuation models. However, it can be valued as an option.

Valuing assets using options is challenging. Binomial model and Black-Scholes model are the models developed for valuing financial assets. The same are now being used by the analysts for valuing real options. Valuation using options approach is specifically well suited to decisions in commodity-based businesses like investments in oil and gas fields, refining facilities, chemical plants, and power generators.

Advantages of Contingent claim valuation model

- Assets like Patents, which derive their value almost completely from their option characteristics, cannot be valued with conventional value models.
- Option pricing models provide more realistic estimates of value for, assets when significant benefits emanate from learning and flexibility.
- Option pricing models highlight a significant aspect of risk, while DCF and relative valuation models almost consistently view risk negatively.

Limitations of Contingent claim valuation model:

- Learning and flexibility (option) will have value only if the firm enjoys a certain degree of uniqueness. If its competitors can imitate the firm, then options may not be valuable.
- Constant variance and dividend yield are assumed by the option pricing models while valuing the short-term options on the traded assets. But these assumptions do not apply to long term options on nontraded assets.

Case study

PAULO HOTELS LIMITED

Paulo Hotels Limited (PHL) is a major hotel chain of India. The company operates 30 hotels of which 14 are owned by it and the rest are owned by others but managed by PHL. PHL's principal strategy has been to serve the high end of the international and leisure travel markets in major metropolises, secondary cities, and tourist destinations. It plans to continue to develop new businesses and leisure hotels to take advantage of the increasing demand which is emanating from the larger flow of commercial and tourist traffic of foreign as well as domestic travelers.

PHL believes that the unique nature of its properties and the emphasis on personal service distinguishes it from other hotels in the country. Its ability to forge management contracts for choice properties owned by others has given it the flexibility to swiftly move into new markets while avoiding the capital intensive and time consuming activity of constructing its hotels.

PHL's major competitors in India are two other major Indian hotel chains and a host of other five star hotels which operate in the metropolises as an extension of multinational hotel chains. The foreign hotel majors are considerably stronger than the Indian hotels in terms of financial resources, but their presence in the country has historically been small. With the government committed to developing India as a destination for business and tourism, several hotel majors have announced their intention to establish or expand presence in the country.

PHL's operating revenues and expenses for the year just concluded (year 0) were as follows:

Operating Revenues

Rupees (in million)

350 PP-V&BM

- Room rent 1045
- Food and beverages 680
- Management fees for managed properties 75

Operating Expenses

- Materials 260
- Personnel 260
- Upkeep and services 350
- Sales and general administration 350

PHL's assets and liabilities (in millions) at the end of year 0 were as follows:

<i>Owner's Equity & Liabilities</i>		<i>Assets</i>	
Net worth	1110	Net Fixed Assets	1510
Debt	1000	Gross Block:	2110
Accumulated Depreciation	600		
Net Current Assets	600		
	2110		2110

PHL had no operating assets.

At the beginning of the year 0, PHL owned 2190 rooms. It has planned the following additions for the next seven years. Most of the land needed by the company for these additions has been already acquired.

<i>Year</i>	<i>Rooms</i>	<i>Investment (in million rupees)</i>
1	80	200
2	130	300
3	80	240
4	130	500
5	186	800
6	355	1400
7	150	1300

A good portion of investment in year 7 would be toward purchase of land. For the sake of simplicity assume that the addition will take place at the beginning of the year. For developing the financial projections of PHL, the following assumptions may be made.

- The occupancy rate will be 60 percent for 1st year. Thereafter, it will increase by 1 percent per year for the next 6 years.

- The average room rent per day will be Rs. 2,500 for 1st year. It is expected to increase at the rate of 15 percent per year till 7th year.
- Food and beverage revenues are expected to be 65 percent of the room rent.
- Material expenses, personnel expenses, upkeep and services expenses, and sales and general administration expenses will be, respectively, 15%, 15%, 18% and 18% the revenues (excluding the management fees).
- Working capital (current assets) investment is expected to be 30 percent of the revenues.
- The management fees for the managed properties will be 7 percent of room rent. The room rent from managed properties will be more or less equal to the room rent from owned properties.
- The depreciation is expected to be 7 percent of the net fixed assets.
- Given the tax breaks it enjoys, the effective tax rate for PHL will be 20 percent.

Besides financial projections, the following information is relevant for valuation:

- The market value of equity of PHL at the end of the year 0 is Rs.3500 million. The imputed market value of debt is Rs.1000 million
- PHL's stock has a beta of 0.80
- The risk -free rate of return is 10 percent and the market risk premium 7 percent
- The post-tax cost of debt is 9 percent
- The free-cash flow is expected to grow at 10 percent per annum after 7 years.

Valuation of PHL:

Discounted Cash Flow (DCF) Value:

Financial Projections:

Year	1	2	3	4	5	6	7	
A. Rooms	2270	2400	2480	2610	2796	3151	3301	
B. Occupancy rate	0.60	0.61	0.62	0.63	0.64	0.65	0.66	
C. Average room rent (in rupees)	2500	2875	3306	3802	4373	5028	5783	
Total Revenues*:								
D. Room rent from owned properties		1243	1535	1856	2281	2856	3759	4599
E. Food & beverage revenues		808	998	1206	1483	1856	2443	2989
F. Revenue from owned properties (D+E)		2051	2533	3062	3764	4712	6202	7588
G. Management fees from managed properties		87	108	130	160	200	263	322
H. Total Revenues (F+G)		2138	2641	3192	3924	4912	6465	7910

Total operating expenses*:

I. Material Expenses		308	380	459	565	707	930	1138
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352 PP-V&BM

J. Personnel Expenses	308	380	459	565	707	930	1138
K. Upkeep and service Expenses	369	456	551	678	848	1116	1366
L. Sales and general administration expenses	369	456	551	678	848	1116	1366
M. Total operating expenses	1354	1672	2020	2486	3110	4092	5008

*All figures in million rupees

Free cash flow from Operations*:

N.EBDIT (H-M)	784	969	1172	1438	1802	2373	2902
O. Depreciation	120	132	140	166	210	293	363
P. EBIT	664	837	1032	1272	1592	2080	2539
Q. Tax @ 20%	133	167	206	254	318	416	515
R. NOPLAT	531	670	826	1018	1274	1664	2024
S. Gross Cash Flow	651	802	966	1184	1484	1957	2387
T. Gross Investment (Fixed assets –Current assets)	215	445	399	710	1085	1887	1716
U. Free Cash Flow from operations (S – T)	436	357	567	474	399	70	671

Schedule for Current Assets, Fixed Assets and Depreciation*:

A. Net Current Assets**	600	615	760	919	1129	1414	1861
B. Net Current Assets addition**	15	145	159	210	285	447	416
C. Gross Block**	2110	2310	2610	2850	3350	4150	5550
D. Capital Expenditure**	200	300	240	500	800	1400	1300
E. Acc. Depreciation**	600	720	852	992	1157	1367	1660
F. Net block (C+D-E)	1710	1890	1998	2358	2993	4183	5190
G. Depreciation	120	132	140	166	210	293	363

*All figures in million rupees

** At the beginning of year

Cost of Capital (K_0) = Weight of Equity x Cost of Equity + Weight of Debt x Cost of Debt

Weight of Equity = $3500/4500 = 0.7777$

Weight of Debt = $1000/4500 = 0.2222$

Cost of Equity of PHL using CAPM is :

$$\begin{aligned} \text{Cost of equity} &= \text{Risk free rate of return} + \text{Beta of PHL (Market risk premium)} \\ &= 0.10 + 0.8 (0.07) = 0.10 + 0.056 = 0.156 = 15.6 \% \end{aligned}$$

Cost of debt is given as 9 percent.

$$\text{Cost of Capital (K}_0\text{)} = 0.7777 (0.156) + 0.2222 (0.09) = 14 \%$$

Continuing value:

The Projected cash flow for year 7 is 671 million

$$\text{WACC} = K_0 = 14\% ,$$

Growth rate = 10 % ;

$$\text{CV 7} = \frac{\text{FCF}_8}{\text{WACC}-g} = \frac{671(1.10)}{0.14-0.10} = 18,543 \text{ million}$$

Value of Equity = Discounted FCF during the explicit forecast period + Discounted Continuing Value + value of non-operating assets-Market value of debt claims

$$\frac{436}{(1.14)} + \frac{357}{(1.14)^2} + \frac{567}{(1.14)^3} + \frac{474}{(1.14)^4} + \frac{399}{(1.14)^5} + \frac{70}{(1.14)^6} + \frac{671}{(1.14)^7} + 0 + \frac{18453}{(1.14)^7} - 1000$$

Value of Equity =Rs.8209 million

Since the discounted continuing value i.e., 18,543 million appears large in this valuation, it is worth looking into it further.

Valuation of Banks

Financial Institutions like banks and insurance companies are among the most challenging companies to value, particularly for outside analysts as they do not have some crucial information such as asset-liability mismatch about these companies. Further, as these institutions are highly levered, their valuations are remarkably sensitive to small changes in key drivers. Their operations cannot be valued separately from interest income and interest expense, as they are the main components of their income statements.

In valuation of the banks, the focus has to be not on profit growth, but on growth of stability. Therefore, for financial companies which are highly levered, the equity cash flow approach is more appropriate. The equity DCF approach does not tell us how and where a Bank creates value in its operations. Is the bank creating or destroying value when receiving the percentage of interest i.e., for example assume that 6.5 percent on its loans or when paying. 4.3 percent on deposits.

When valuing banks and other financial institutions, where capital structure is an inseparable part of operations, capital cash flow and equity cash flow valuation models are used.

Discounted cash flow approach

Business valuation models of financial institutions are largely based on discounted cash flow approach (DCF model) and assume some growth stages, which is typical for different growth rates of cash flow or resources for owners. A bank's cash flows tend to be highly volatile and connected to macroeconomic factors. This makes forecasting cash flows very challenging and prone to mistake. Hence, the calculation of FCFE in banks and financial institutions can be implemented into two basic ways:

Method 1: FCFE = net income - growth of capital + other income

The growth of financial institutions should be followed by an adequate increase in its capital. If the growth is not accompanied by an adequate increase in the capital, it may lead to failure of financial institutions due to lack of

solvency. Growth in FCFE lowers the capital, as it means that the bank is introduced into the banking business of profits that would otherwise be paid to owners as dividends.

Method 2: $FCFE = \text{resources from issue of shares} - \text{preference shares} + \text{dividends} - \text{capital increase (+decrease in capital)}$

The two Equity discounted cash flow models, H Model a variant of two stage growth model and the three stage growth model are suitable for banking companies characterized by high growth initially, followed by declining growth due to competition and lastly maintains a stable low growth because of its nature of business in India.

The Residual Income Valuation Method

An alternative bank valuation model is used based on discounted residual income. Residual Income (RI) is the difference between operating profits after taxes and the cost of equity capital employed. The latter equals the previous year's total equity multiplied by the cost of equity according to CAPM. Second, the terminal value of the bank in perpetuity is estimated by dividing the residual income of the year following the analytical period y with the cost of equity. The two methods theoretically show that both Equity Cash Flow Method and Residual Income (RI) Method produce equivalent equity bank values.

VALUATION OF PRIVATE COMPANIES

Private companies can be of different types. These companies may include small family-owned enterprises, divisions/subsidiaries of larger private companies, or large corporations. It can be a single-employee company, unincorporated businesses and previously public companies that have been become private in management buyouts or other transactions. Many large, successful companies also exist that have remained private since inception, such as IKEA and Bosch in Europe and Life style, DHL, Marriott Hotels etc., in India. The varied features of private companies and the absence of a commonly recognized body providing guidance on valuation methods and assumptions have contributed to the progress of different valuation practices.

Private company valuation is the set of procedures used to assess a company's current net worth. Valuation approaches for large private companies are theoretically similar to those used for public companies though the labels used for them by analysts in each field and the details of application may differ.

The three common methods for valuing private companies, using data available to the public:

- **Market Approach:** This is the most common private company valuation method. The analysts use a relative valuation model when they apply a market-based approach in evaluating price and enterprise multiples relative to the value of a comparable.

Comparable Company Analysis (CCA) of the relative valuation model operates under the assumption that similar firms in the same industry have similar multiples and uses the recent valuation of comparable companies in the peer universe of the target company. Common valuation multiples such as EV/Sales, EV/EBITDA were selected from the financial statements of the peers and the value of the target company is estimated based on the HIGH, LOW and AVERAGE multiples of the peer universe.

- **Income Approach:** The income approach values an asset as the present discounted value of the cash flow (DCF) expected from it. DCF method has several variations depending on the assumptions the valuator makes.
- **Asset-based approach:** This method values a private company based on the values of the underlying assets of the entity less the value of any related liabilities.

VALUATION OF SMALL COMPANIES

Small companies are private in nature and financially less transparent than their publicly traded peers. Though often smaller in size these small private companies have a major importance in the world's economy. These

businesses have noticeably more risk than larger ones. Size contributes to the discount in the valuation since it replicates the industry. These private company's owners do not publicly issue shares of their company, instead they keep ownership and associated transactions at low-key.

Valuation of such closely-held private companies can be costly and difficult due to non-availability of exact financial information. Small private companies may be good acquisition targets for larger competitors and publicly-traded counterparts. There are different methodologies and financial tools to evaluate a small private company.

When it comes to small businesses which are private in nature, the following three techniques are most commonly used:

- Comparable Company Trading Multiple Analysis, (also known as "peer group analysis",
- Precedent/Comparable Transaction Analysis, and
- Discounted Cash Flow ("DCF") Analysis.

Comparable company trading multiples analysis

The method uses the valuation multiples of similar or comparable publicly-traded companies to value a private company. Peers can be grouped based on many criteria, such as industry focus, private company size, or growth. The multiples can be Enterprise Value (EV) based multiples like EV/Sales, EV/EBITDA or EV/EBIT, and Equity based multiples like Price to Earnings (P/E).

Valuation discounts for liquidity that ranges from 20-30% should be applied to the private company that best reflects the target private company's risk. A major drawback of this valuation method is that it is often difficult to define the right comparable private companies. Hence, adjustments should be made to replicate differences, such as business mix, geographic spread and capital structure.

Comparable Transaction Analysis

Comparable transactions analysis uses actual transaction multiples instead of trading multiples from the universe of comparable private companies. The analysis uses multiples and premiums paid in comparable transactions to value target private companies. When using this method to value private companies, transactions should have relevant characteristics:

- Industry group
- Timing - Transactions should be recent (typically no more than five years)
- Business mix (products, markets served, distribution channels, etc.)
- Geographic location
- Size (using figures of revenues, assets, market cap)

The major shortcoming of this method is the only commonly available metric 'sales'. Value is not always obviously tied to sales or even profit. Moreover, model transactions are hardly ever directly comparable. Every transaction has its own set of exclusive circumstances and not all aspects of a transaction can be captured using valuation multiples.

Discounted Cash Flow Analysis

This method uses the forecasted free cash flow of the target small company discounted by the firm's weighted

average cost of capital, plus a risk factor measured by beta. Beta uses past data to measure the sensitivity of the private company’s cash flow. For example, the sensitivity of the cash flows of the company in different business cycles can be used to measure the beta. The drawback of the method is the availability of the information about the cash flows and the weighted average cost of capital.

There are also other methods available for the seller to estimate the value of the small business. These methods are simple and easy to understand. The methods are (i) Asset based approach and (ii) Income based approach.

Asset-based approach

The asset-based method looks at the business’s assets and liabilities. The value of the business is estimated by finding the difference between assets and liabilities. Items that add value to the business are assets and items that add debts to the business are liabilities. The book value of the business is the owner’s equity on the balance sheet. The lowest price is the book value at which the business will be sold. A strong business could be sold for more than the book value.

Income Method

The income method looks at the company’s past profits and cash flow. The ability to pay debts with the earned profits reflects lower risks than companies with a large amount of debt. The more efficient the business is at paying debts, the more valuable it is. Using the profit and loss statement for small business, the future profits and debts of the business can be projected. Using the projections, the small business value can be estimated.

Problem: Indus Limited has an invested capital of Rs.60 million. Its return on invested capital is 13 percent and its weighted average cost of capital is 11 percent. The expected growth rate in Indus’s invested capital will be 20 percent for the first three years, 12 percent for the following two years and 8 percent thereafter forever. From the forecast of Indus’s free cash flow given below calculate the enterprise DCF value of Indus Capital.

Rs. in millions							
Year	1	2	3	4	5	6	7
Invested Capital (Beg)	60.00	72.00	86.40	103.68	116.12	130.06	140.46
NOPLAT	6.00	7.20	8.64	10.37	11.61	13.00	14.05
Net Investment	12.00	14.40	17.28	12.44	13.93	10.40	11.24
Free Cash Flow (FCF)	(6.00)	(7.20)	(8.64)	(2.07)	(2.32)	2.60	2.81
Growth rate (%)	20	20	20	12	12	8	8

Solution:

The present value of free cash flow (FCF) during the planning period:

$$PV (FCF) = \frac{-6.00}{(1.11)} + \frac{+7.20}{(1.11)^2} + \frac{-8.64}{(1.11)^3} + \frac{-2.07}{(1.11)^4} + \frac{-2.32}{(1.11)^5} + \frac{-2.60}{(1.11)^6} = 18.9563 \text{ million}$$

The horizon value at the end of six years, applying the constant growth model, is:

$$V_6 \frac{FCF_6 + 1}{WACC - g} = \frac{151.70}{(0.11 - 0.08)} = 5056 \text{ million}$$

The present value of V_6 is

$$\frac{5056}{(0.11)^6} = \text{Rs. } 2851 \text{ million}$$

Adding the present value of free cash flow during the planning period and present value of horizon value, gives the enterprise DCF value:

$$V_0 = -18.9563 + 2851 = \text{Rs. } 2832 \text{ million.}$$

VALUATION OF MICRO, SMALL AND MEDIUM ENTERPRISES (MSME)

Micro, Small and Medium-sized Enterprises (SMEs) hold an important role for the economics of both developed and developing countries, considerably contributing to employment, gross domestic product (GDP) and exports.

Basis of Classification of MSME¹

As per Micro, Small and Medium Enterprises Development (Amendment) Bill, 2015, the investment limit prescribed for Micro, Small and Medium Enterprises (MSMEs) in the country, is as under:

Manufacturing enterprises:

- (i) **Micro enterprise:** Investment in plant and machinery does not exceed fifty lakh rupees.
- (ii) **Small enterprise:** Investment in plant and machinery is more than fifty lakh rupees but does not exceed ten crore rupees.
- (iii) **Medium enterprise:** Investment in plant and machinery is more than ten crore rupees but does not exceed thirty crore rupees.

Service enterprises

- (i) **Micro enterprise:** Investment in equipments does not exceed twenty lakh rupees.
- (ii) **Small enterprise:** Investment in equipments is more than twenty lakh rupees but does not exceed five crore rupees.
- (iii) **Medium enterprise:** Investment in equipments is more than five crore rupees but does not exceed fifteen crore rupees.

In February 2018, the Union Cabinet chaired by the Prime Minister Shri Narendra Modi has approved amendment to MSMED Act 2006 to change the basis of classifying Micro, Small and Medium enterprises **from 'investment in plant & machinery/equipment' to 'annual turnover'** and withdrawal of MSMED (Amendment) bill 2015. The bill is pending for approval in Loksabha. This will encourage ease of doing business, make the norms of classification growth oriented and align them to the new tax regime revolving around GST (Goods & Services Tax).

Section 7 of the Micro, Small and Medium Enterprises Development (MSMED) Act, 2006 will accordingly be amended to define units producing goods and rendering services in terms of annual turnover as follows:

- A micro enterprise will be defined as a unit where the annual turnover does not exceed five crore rupees;

1. <http://pib.nic.in/newsite/PrintRelease.aspx?relid=176353>

- A small enterprise will be defined as a unit where the annual turnover is more than five crore rupees but does not exceed Rs 75 crore;
- A medium enterprise will be defined as a unit where the annual turnover is more than seventy five crore rupees but does not exceed Rs 250 crore.
- Additionally, the Central Government may, by notification, vary turnover limits, which shall not exceed thrice the limits specified in Section 7 of the MSMED Act.

VALUATION METHODS FOR MICRO, SMALL AND MEDIUM SIZED ENTERPRISES

Analysts use various approaches for valuing MSMEs ranging from simple to the sophisticated. There are three approaches to valuation, in general terms. The discounted cash flow valuation, relative valuation and contingent claim valuation. Distinct features of SMEs have an impact on the choice of the valuation approach. The following approaches are generally followed to determine the value of the SMEs business depending on the nature of operations:

- The DCF method,
- The relative valuation method,
- Asset based method and
- The mixed method.

Discounted Cash Flow (DCF) method

A small business is valued using all the methods but the Discounted Cash Flow method gives the best picture of the business. DCF method is the most popular method as it arrives at nearly accurate valuation. In this method, the value of the future cash flows of the business is reduced to present. It also takes inflation into account while calculating the valuation of the business. This method gives a better picture of company's value at present, and is more reliable for the investors, as well as, the business owners. Most of the companies, however, go for a combination of two or more methods for estimating the enterprise value.

Comparable Transaction Valuation

Size has consequences for the level of risk and, hence, comparable transaction valuation method of relative valuation approach is also used for small enterprises. Small size naturally increases risk levels and in estimating required rates of return for small and private companies risk premiums for small size will often be incorporated. This method is usually used when the valuation is accepted by the valuer for sale.

Under this method, peer group is compared on similar standards. Similar companies are decided based on industry they belong to as well as the market capitalization for the purpose of valuation. The companies are then assessed on common multiples such as EV/EBITDA, PE ratio, PEG ratio and so on. For fair valuation, the company should be evaluated on more than one standard to ascertain the current and the potential value of the company. However, this approach has its own set of drawbacks when the historical data of the company is not available. Therefore, this approach is not used solely, but in combination with other approaches. Comparable Transaction Valuation is often used along with Discounted Cash Flow to present fair value of business.

Asset based Approach

Asset based approach is another approach to valuation of SMEs. The valuation here is simply the difference between assets and liabilities taken from the balance sheet, adjusted for certain accounting principles. Fair market value of assets is arrived to get enterprise value. Patents, goodwill, bad debts, etc. are valued at their

book value along with adjustments for inventory undervaluation to arrive at the fair value of the assets. This approach is generally used to assess property and investment companies, to cross check for asset based trading companies such as hotels and property developers, under performing trading companies with strong asset base (market value vs. existing use).

Asset Based valuation can be done using three methods. They are Economic Book Value Calculation, Liquidation Value Calculation, and Valuation at Replacement Cost. The valuation of the enterprise is done as per the values arrived from any of the three methods as under:

- Economic Book Value: The accounting book values of the assets are adjusted to their current market value.
- Liquidation Value method: At estimated sale value of assets at liquidation less the cost of liquidation.
- Valuation at Replacement Cost: The cost incurred to get the same assets from scratch is used for valuing assets.

However, the asset-based approach is not an alternative to the above approaches, as this approach itself uses one of the three methods to determine the values. In determining which of these approaches to use, the valuer must exercise discretion as each technique has advantages as well as drawbacks. It is normally considered advisable to employ more than one technique, which must be reconciled with each other before arriving at a value conclusion.

Mixed method (particularly, Anglo-Saxon method with limited capitalization of goodwill): In general, mixed methods mediate between income-based methods and assets-based methods, as the value of an enterprise mostly depends on the attitude to produce earnings. SMEs are shaped by their entrepreneurs and that strongly affect the future perspectives of profit. Therefore, in case of changes in the decision-making owner, perspectives of profit will considerably change, as they particularly depend on the entrepreneur. Thus, it is reasonable to assume that goodwill has a limited duration, in case of changes in ownership arrangement. The method is suitable to define the value of small and medium-sized enterprises and theoretically correct for the specific purpose.

Furthermore, the traditional methods are not applicable for the valuation of service provider's like doctors, lawyers or tax advisors. These professions are not the same as industrial enterprises with tangible assets, as their main assets are intangible such as knowledge and goodwill. For these companies the multipliers of the relevant value approach are more suitable. The valuer choice of the set of methods to estimate the business value depends upon a number of factors such as availability of comparative business sales data, historical and future data about business earnings etc.

Problem

The ROIC (return on invested capital) of Modern Engineering Enterprises is 17 percent and its growth rate is 9 percent. Modern Engineering's (depreciation and amortization charges as a percent of EBITDA) DA is 8 percent and its tax rate is 25 percent. Modern Engineering's WACC is 13 percent and its EBITDA is 350 million. What is the EV of Modern Engineering Enterprises?

Solution: Modern Engineering Enterprises EV/ EBITDA:

$$\frac{EV}{EBITDA} = \frac{ROIC - g}{ROIC \times (WACC - g)} \times (1 - DA) (1 - t)$$

$$= \frac{0.17 - 0.09}{0.17 \times (0.13 - 0.09)} \times (1 - 0.08) (1 - 0.25) = 8.11716$$

Since EBITDA is 350 million

Modern Engineering Enterprises Enterprise Value (EV) is:

$$EV = 350 \times 8.11716 = 2,841 \text{ million}$$

VALUATION OF STARTUPS

Startup means an entity, incorporated or registered in India:

- Upto a period of seven years from the date of incorporation/registration or upto ten years in case of Startups in Biotechnology sector
- As a private limited company or registered as a partnership firm or a limited liability partnership
- With an annual turnover not exceeding Rs. 25 crore for any of the financial years since incorporation/registration
- Working towards innovation, development or improvement of products or processes or services, or if it is a scalable business model with a high potential of employment generation or wealth creation

Features of startups:

The following are some of the key characteristics of start-up companies:

- No past history, operations have not reached the stage of commercial production.
- No or negligible revenue with operational losses.
- Limited promoter's capital infused and high dependence on external sources of funds.
- Illiquid investments.

Unlike valuing traditional cash-generating and profit-making businesses, there is no standard methodology in valuing start-ups. Valuation of start-ups is about assessing both the risks and rewards associated. Entrepreneurs want the value to be as high as possible and the VC want a value low enough so that they own a reasonable portion of the company for the amount they invest. With little or no past financial performance, valuing a start-up is mostly based on potential rather than past results.

Methods of Valuation

The following are the valuation methods of start-ups as per Indian Valuation Standards Issued by ICAI applicable for the valuation reports issued on or after 1st July, 2018:

- Income approach
- Cost approach
- Venture Capital (VC) method
- First Chicago Method
- Adjusted discounted cash flow method
- Rule of thumb

Income approach : It is a valuation approach that converts maintainable or future amounts (e.g., cash flows or income and expenses) to a single current (i.e., discounted or capitalized) amount. The fair value measurement is determined on the basis of the value indicated by current market expectations about those future amounts. This approach involves discounting future amounts (cash flows/income/cost savings) to a single present value. The *valuer* may consider using other valuation approaches instead of income approach or in combination with

income approach when there is significant uncertainty on the amount and timing of income/future cash flows of the start-up companies;

Cost approach: It is a valuation approach that reflects the amount that would be required currently to replace the service capacity of an asset (often referred to as current replacement cost). A *valuer* applies cost approach in case income approach cannot be used. The *valuer* may also consider using other valuation approaches in combination with cost approach, when the asset has not yet started generating income / cash flows (directly or indirectly);

The following are some of the generally acceptable methods of valuation of start-ups:

Venture Capital (VC) method: Venture Capitalist Method is one of the globally acceptable methodologies in estimating the value of start-ups. In this method the valuation of the start-up is done from the venture capitalist point of view. It indicates the value of pre-money ventures by following the process that VCs go through, where they exit an investment within three to seven years. It estimates the expected exit price of a similar mature business venture and discounts it back to present value considering the risks involved. To illustrate, it follows these steps:

Step 1: Forecast the financial performance of the venture in three to seven years, the anticipated investment horizon of a VC. Consider the size of the target market, expected share and profitability of the venture by then. Identify reasonable milestones particularly for market roll-out and acceptance.

Step 2: Look for comparable to determine the multiples paid by investors for a similar business. Do they pay 30X earnings, 3X revenues or other comparable metrics?

Step 3: Calculate the exit value by taking the product of the net income (or another base) and the multiple of a similar business.

Step 4: Discount the exit value using the appropriate rate.

Unlike typical financial investors in a mature and stable business that usually seek to double or triple their investment, a VC often expects to get 10X or more of its investment upon exit. While it seems exorbitant, one needs to understand the business model of a VC and the risks it takes to invest in a business at a very early stage. Oftentimes, a VC will only have one or two successful ventures out of its 10 investments.

Step 5: Consider the amount of investment required to arrive at pre-money valuation. Use different approaches to perform a sanity check on the resulting values.

There is no particular science in these valuations. Investor's desire to pioneer the new venture is driven by the hope that they've discovered the next unicorn, matched by the founder's willingness to fund his venture in exchange for a part of his company.

The following are the factors contributing to better valuation from the point of view of the investor:

Traction – If the founder is able to show that his product has gained good traction i.e., grip in his target market, then that reduces market acceptability risk and, therefore, improves the valuation.

Market size – The bigger the market size, the more unique the product and ultimately, the more attractive the founder's proposition: the better the value.

Management team – Though there is no track record for the start-ups, investors place huge importance on the passion and talent behind the management team. Having a great management team reduces the execution risk of the business and thus, improves start-up valuation.

Problem

Whitestone Ventures, a PE investor is considering investing 3500 million in the equity of Orbital Systems, a start-up IT company. Whitestone's required rate of return from this investment is 35 percent and its planned

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holding period is 5 years. Orbital has projected an EBITDA of 4000 million for year 5. An EBITDA multiple of 6 for year 5 is considered reasonable. At the end of year 5, Orbital Systems is likely to have a debt of 2500 million and a cash balance of 800 million.

- i. What ownership share in Orbital Systems should Whitestone ask for?
- ii. What is the post-money investment value of Orbital Systems equity?
- iii. What is the pre-money investment value of Orbital Systems?

Solution:

Required rate of return of Whitestone (K_{PE}) = 35%

Required value of PE investments $V_6 = 3500 \times 4.484 = 15,694$ million

Estimated Equity Value $V_6 = 4000 \times 6 + 800 - 2500 = 22,300$ million

Ownership Share = Required value of PE investments / Estimated Equity Value
= $15,694 / 22,300 = 70.37\%$

Post-Money Investment Value of the firm's equity

$$\frac{\text{Funds provided by the PE}}{\text{PE's ownership interest (\%)}} = \frac{3500}{0.7037} = 4973 \text{ million}$$

Pre-Money Investment Value of Orbital System's Equity = Post-Money Investment - Funding provided by the PE

$$\begin{aligned} &\text{Value of the firm's equity} \\ &= 4,973 - 3,500 \\ &= 1,473 \text{ million.} \end{aligned}$$

First Chicago Method: The First Chicago Method is one of the context specific valuation methodologies which consider payouts to the investor during the holding period. This method takes into consideration three scenarios: Success, Failure and Survival case and associate probability to each case to find the weighted average price of a start-up business. Compared to the Venture Capital Method, the First Chicago Method has conceptual advantages but is also characterized by a more complex valuation process.

Adjusted discounted cash flow method - This method is the scientific tool used to judge the value of a start-up on the basis of its potential which is converted in the form of cash flow and adjusted with differential discount rates based upon the risk perception of a start-up entity. The most common problem with applying a DCF method to a start-up is that "business stabilization" is not reached in 4-5 years (the usual forecast period). Similarly, listed business' multiples do not reflect the growth potential of a start-up. Start-ups can be valued using an extended DCF to capture their full growth, or even a two-stage DCF model that applies a formula to reflect a gradually decreasing growth.

Rule of thumb - Rule of thumb or benchmark indicator is used as a reasonable check against the values determined by the use of other valuation approaches in a valuation engagement. It is technically not a valuation method but still used as a rationality check against the values determined by the use of other valuation approaches. For example, start-ups in the tech space can be valued by using new metrics like EV/DAU (Enterprise Value per Daily Average User) and EV per room in hotel business and many others.

There is no standard method to determine the pre-money valuation (the startup's value before receiving outside investment). Quantitative analysis and financial projections don't always predict the future success of the early stage (pre-revenue) startup and that is why some angel investors put greater value in the entrepreneur and management team. Risk is to be reduced irrespective of the region, product or industry.

Below are some of the pre-money valuation methodologies that are often used by angel investors:

Berkus Method: According to super angel investor, Dave Berkus, the Berkus Method, “assigns a number, a financial valuation, to each major element of risk faced by all young companies – after crediting the entrepreneur the basic value for the quality and potential of the idea itself.” The Berkus Method uses both qualitative and quantitative factors to calculate a valuation based on five elements:

- Sound Idea (basic value)
- Prototype (reduces technology risk)
- Quality Management Team (reduces execution risk)
- Strategic Relationships (reduces market risk)
- Product Rollout or Sales (reduces production risk)

But the Berkus Method doesn't stop with just qualitative drivers – monetary value is attached to each of the four elements of risk faced by the young companies – after crediting the entrepreneur the basic value for the quality and potential of the idea itself. In particular, up to \$500K for each element of risk. \$500K is the maximum value that can be ‘earned’ in each category, giving the opportunity for a pre-money valuation of up to \$2M-\$2.5M. Berkus sets the hurdle number at \$20M (in fifth year in business) to “provide some opportunity for the investment to achieve a ten-time increase in value over its life. Berkus Method is best suited for pre-revenue, pre-seed companies. Once the company started making revenues for any period of time, this method is no longer applicable, as actual revenues can be used to estimate project value over time.

Scorecard Valuation Method: It is also known as ‘Bill Payne valuation method’ and is one of the most preferred methodologies used by angels. This method compares the startup (raising angel investment) to other funded startups modifying the average valuation based on factors such as region, market and stage. The following are the steps involved in calculation of the pre-money valuation of the target startup company:

- i. Determine the average pre-money valuation of pre-revenue companies in the region and business sector of the target company.
- ii. Compare the startup to the perception of other startups within the same region using factors such as:
 - Strength of the Management Team (0–30%)
 - Size of the Opportunity (0 – 25%)
 - Product/Technology (0–15%)
 - Competitive Environment (0–10%)
 - Marketing/Sales Channels/Partnerships (0–10%)
 - Need for Additional Investment (0–5%)
 - Other (0–5%)
- iii. The percentage weights are then calculated and the resultant sum factor is multiplied by the average pre-money valuation to arrive at the pre-money value of the target startup.

The ranking of these factors is highly subjective, but the main emphasis besides scalability is on the team as quality of the team is paramount to success.

Multiples used to value Internet companies

The multiples most commonly used to value Internet companies are Price/sales, Price/subscriber, Price/pages visited and Price/inhabitant.

SUMMARY

The appropriateness of a valuation approach for determining the value of an asset would depend on valuation bases and premises. In addition, some of the key factors that a *valuer* shall consider while determining the appropriateness of a specific valuation approach and method are:

- Nature of asset to be valued;
- Availability of adequate inputs or information and its reliability;
- Strengths and weakness of each valuation approach and method; and
- Valuation approach/method considered by market participants.

The valuation approaches and methods shall be selected in a manner which would maximize the use of relevant observable inputs and minimize the use of unobservable inputs. The price information gathered from an active market is generally considered to be a strong indicator of value.

SELF TEST QUESTIONS

1. Macron company as an ROIC of 20 percent, g of 12 percent and Macron's DA is 8 percent, and tax rate is 25 percent. What is Macron's EV/EBITDA multiple?
2. Why is relative valuation so popular? What are the weaknesses of relative valuation?
3. Explore the valuation of a vacant land by using options model.
4. What are the key drivers of Free Cash Flows (FCF)?
5. Explore the valuation of a bank using equity discounted cash flow method.
6. Discuss the situations in which Gordon growth model, two stage growth model, H-model and three stage growth models can be applied for valuation.

LIST OF FURTHER READINGS

1. Founder's Pocket Guide: Startup Valuation (Founder's Pocket Guide Book 1) Kindle Edition by Stephen R. Poland.
2. Business Valuation for Business Owners by Zachary M. Sharkey.
3. HBR Guide to Buying a Small Business: Think Big, Buy Small, Own Your Own Company (HBR Guide Series) by Richard S. Ruback.
4. Valuation: Measuring and Managing the Value of Companies by McKinsey & Company Inc.

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Lesson 12

Valuations of Business During Distressed Sale

LESSON OUTLINE

- Introduction
- Life Cycle of Declining Companies
- Features of Declining Companies
- Valuation Issues of Declining Companies
- Valuation Uncertainty- Material Uncertainty; Model Uncertainty and Input Uncertainty
- Nature of Disclosure
- Measuring Uncertainty
- Distressed Assets – The Indian Scenario
- SUMMARY
- SELF TEST QUESTIONS

LEARNING OBJECTIVES

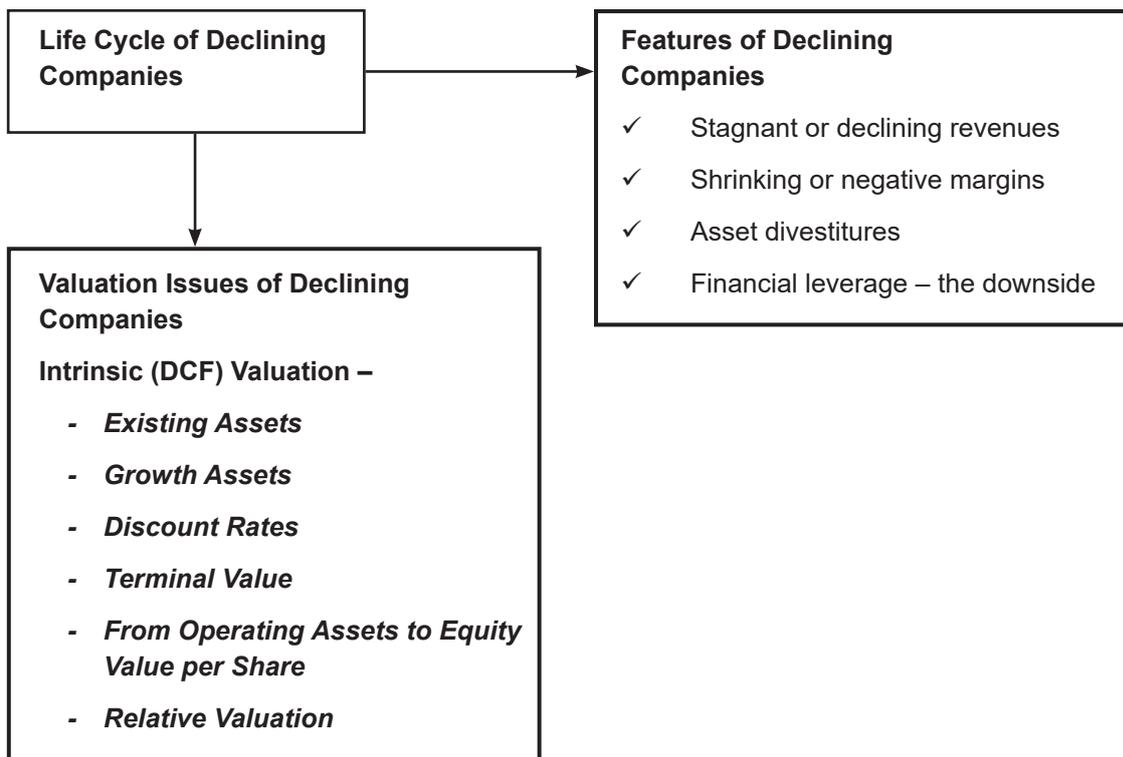
With the passage of time business failures have become a common phenomenon. At times despite embracing of various corporate restructuring measures, it is almost next to impossible to bring the business back from the brink of collapse. In such a scenario, the only option left out with the management is to sell of the business either partially or fully. But sale involves valuation of the business. No doubt, there are various valuation methods to gauge the value of the business but at times of distress the valuation is altogether a different ball game.

This lesson makes an endeavour to focus upon critical facets of business valuation during distressed sale, i.e. limitations of intrinsic valuation method; Characteristics of Declining Companies; Valuation Uncertainties; Scenario of Distressed Assets in India etc. to make the readers conversant with finer details pertaining to the distressed business sale.

ORIENTATION

This study demands expert knowledge on critical topics or concepts pertaining to distressed sale of business. Since, the companies which witnesses bankruptcy due to soaring liabilities, finally taking the route of insolvency go for selling of their assets in order to pay off government and other external liabilities. In light of this, a concrete understanding regarding the parameters used for valuation of assets, factors that may give birth to valuation uncertainty and very importantly the approaches or methods to be adopted for valuation of assets is indispensable.

FAMILY TREE OF CONCEPTS



INTRODUCTION

Distress can be broadly categorized into economic and financial distress. Economic distress is broad-based and afflicts most companies operating in the economy at some point and is normally outside the control of the company. Factors causing economic distress include – general economic recession, technological or cultural shifts, and sometimes, wars or other geo-political confrontations. Some of the factors are temporary, while others may bring a permanent change in the business landscape. Economic distress often leads to financial distress.

Firms in financial distress cannot meet, or have difficulty paying off their financial commitments to their creditors, typically due to high fixed costs, illiquid assets or revenues that are sensitive to economic downturns. Some of the characteristics of financially distressed companies are stagnant or declining revenue, shrinking margin, high leverage, ballooning interest costs, working capital blockage and high customer and employee attrition.

It is critical to identify the nature of distress. The optimal course of action for companies facing irreversible economic distress is liquidation of assets. However, for companies with good prospects but temporarily suffering

due to high debt burden, financial restructuring is advised, and estimating the enterprise value is a critical step during financial restructuring.

In recent years, the need for business valuations and/or valuation analysis has increased significantly. Valuations have become an integral component of the business environment and are required for a broad spectrum of reasons, from investment analysis to financial reporting. Valuations and valuation analyses may encompass interests or entities that are deemed distressed. Distress can embody financial, operational, legal, regulatory and other factors which can impact a business' or interests' ability to satisfy obligations to equity holders, creditors or other parties in interest.

However, conducting valuation precisely is more of an art than a science. This fact becomes evident during valuation of a firm in distress. In other words, the firms that are in their declining stage, and also witness financial distress, are among the most difficult to value. Considering the poor performance of traditional valuation methods in volatile and uncertain environments, this raises the question of whether the traditional valuation methods are appropriate metrics to use for firms that are both in decline and in financial distress.

Hence, the traditional valuation methods fail to account for the main characteristics of many of the declining and distressed firms and therefore provide very biased results. These include, among others, issues of limited applicability or biased treatment of risks. Also, the very definition of the traditional methods, in particular the DCF method, defines that the firm will never cease operations. Therefore, these methods fail to account for the risk of default, resulting in the need for a new valuation framework that specifically addresses the issue of bankruptcy risk and other characteristics of firms in decline and distress.

While the dominant valuation methods have proven to be very reliable for healthy companies with stable future growth prospects, they struggle to yield accurate results for companies that face extreme volatility and uncertainty, such as firms in decline and distress. Several research studies found major deviations in the results from traditional valuation techniques for these kind of firms.

The limited applicability of the traditional methods for firms in decline and distress is caused by the fact that the characteristics of these firms violate some of the fundamental assumptions of these methods. Consequently, these methods have shown poor results for firms that operate in uncertain environments and/or violate some of the main underlying assumptions of the methods. The use of traditional valuation methods in volatile and uncertain scenarios is therefore questionable. As a consequence of the limited applicability, practitioners are ever more willing to abandon the traditional valuation approaches and rely increasingly on new paradigms based primarily on personal assessments to value distressed business assets.

The use of personal judgement and new paradigms instead of the traditional theoretical approach resulted in high variation in the estimates [Damodaran, 2009]. In fact, research conducted by Gilson et. al (2000) analyzed multiple valuation methods for distressed firms and obtained variations of up to 250%. Much of this variation originates from the fact that the traditional valuation methods ignore the possibility of default and assume that the firm will continue to exist into perpetuity. All in all, these factors indicate that use of the normal traditional valuation techniques is not optimal. However, an accurate valuation is particularly important for firms in decline and distress.

LIFE CYCLE OF DECLINING COMPANIES

Growth companies do not want to become mature companies and mature companies constantly try to rediscover their growth roots. In the same way, no mature company wants to go into decline, with the accompanying loss of earnings and value. So at this juncture, it is pertinent to distinguish between mature firms and firms in decline. This distinction can be elucidated with the help of a balance sheet.

Exhibit 1

A Financial Balance Sheet for a Declining Business

Liabilities		Assets		
Debt	<i>If the firm has high debt, there is the possibility of distress</i>	Existing Investments	Investments already made	<i>All of the value comes from existing assets, but some of these asset may be worth more liquidated.</i>
Equity		Generate cash flows today		

There are two key areas where mature companies are different from companies in decline. The first is on the asset side of the balance sheet. If mature companies get the bulk of their value from existing assets and less from growth assets, declining companies get none (or close to none) of their value from growth assets. In fact, it is not uncommon for declining companies to actually lose value from growth investments, especially if they decide to reinvest at rates well below their cost of capital. Existing assets not only represent all of the value of declining firms but some firms may actually get more from liquidating or divesting these assets than from continuing operations. On the liability side, declining firms face much more dire consequences from being over levered, since they cannot count on higher earnings in the future to cover debt obligation. In other words, decline and distress often go hand in hand.

FEATURES OF DECLINING COMPANIES

At this juncture, it is important to understand the features of 'Declining Companies'. The characteristics of declining companies are as follows-

- 1) Stagnant or declining revenues: Perhaps the most telling sign of a company in decline is the inability to increase revenues over extended periods, even when times are good. Flat revenues or revenues that grow at less than the inflation rate is an indicator of operating weakness. It is even more telling if these patterns in revenues apply not only to the company being analyzed but to the overall sector, thus eliminating the explanation that the revenue weakness is due to poor management (and can thus be fixed by bringing in a new management team).
- 2) Shrinking or negative margins: The stagnant revenues at declining firms are often accompanied by shrinking operating margins, partly because firms are losing pricing power and partly because they are dropping prices to keep revenues from falling further. This combination results in deteriorating or negative operating income at these firms, with occasional spurts in profits generated by asset sales or one time profits.
- 3) Asset divestitures: If one of the features of a declining firm is that existing assets are sometimes worth more to others, who intend to put them to different and better uses, it stands to reason that asset divestitures will be more frequent at declining firms than at firms earlier in the life cycle. If the declining firm has substantial debt obligations, the need to divest will become stronger, driven by the desire to avoid default or to pay down debt.
- 4) Big payouts – dividends and stock buybacks: Declining firms have few or any growth investments that generate value, existing assets that may be generating positive cash flows and asset divestitures that result in cash inflows. If the firm does not have enough debt for distress to be a concern, it stands to reason that declining firms not only pay out large dividends, sometimes exceeding their earnings, but also buy back stock.

5) Financial leverage – the downside: If debt is a double-edged sword, declining firms often are exposed to the wrong edge. With stagnant and declining earnings from existing assets and little potential for earnings growth, it is not surprising that many declining firms face debt burdens that are overwhelming. Note that much of this debt was probably acquired when the firm was in a healthier phase of the life cycle and at terms that cannot be matched today. In addition to difficulties these firms face in meeting the obligations that they have committed to meet, they will face additional trouble in refinancing the debt, since lenders will demand more stringent terms.

VALUATION ISSUES OF DECLINING COMPANIES

The issues that we face in valuing declining companies come from their common characteristics. Most of the valuation techniques we use for businesses, whether intrinsic or relative, are built for healthy firms with positive growth and they sometimes break down when a firm is expected to shrink over time or if distress is imminent.

Intrinsic (DCF) Valuation

The intrinsic value of a company is the present value of the expected cash flows of the company over its lifetime. While that principle does not change with declining firms, there are practical problems that can hamper valuations which are discussed as under-

Existing Assets

When valuing the existing assets of the firm, we estimate the expected cash flows from these assets and discount them back at a risk-adjusted discount rate. While this is standard valuation practice in most valuations, there are two aspects of declining companies that may throw a twist in the process.

- i) Earning less than cost of capital: In many declining firms, existing assets, even if profitable, earn less than the cost of capital. The natural consequence is that discounting the cash flows back at the cost of capital yields a value that is less than the capital invested in the firm. From a valuation perspective, this is neither surprising nor unexpected: assets that generate sub-par returns can be value destroying.
- ii) Divestiture effects: If existing assets earn less than the cost of capital, the logical response is to sell or divest these assets and hope that the best buyer will pay a high price for them. From a valuation perspective, divestitures of assets create discontinuities in past data and make forecasts more difficult to make. To see how divestitures can affect past numbers, consider a firm that divested a significant portion of its assets midway through last year. All of the operating numbers from last year – revenues, margins and reinvestment – will be affected by the divestiture, but the numbers for the year will reflect the operating results from the portion of the year prior to the divestiture. Similarly, risk parameters such as betas, where we use past prices or returns, can be skewed by divestitures of assets midway through the time period. For the forecasting consequences, try estimating the revenues and earnings numbers for a firm that is expected to divest a large portion of its assets over the next few years. Not only do we have to pinpoint the assets that will be divested and the effects of the divestiture on operating revenues and earnings, but we also have to estimate the proceeds from the divestitures. Put another way, a divestiture, by itself, does not affect value, but what we expect to receive in comparison for the divested assets can affect value.

Thus, what makes the valuation of existing assets of a declining firm difficult is that the value you derive from these assets in cash flows may be lower than that value you obtain from divesting the assets.

Growth Assets

Declining firms derive little from growth assets, and the valuation of these assets should therefore not have a significant impact on value. While this is generally true, we have to leave open the possibility that some declining firms are in denial about their status and continue to invest in new assets, as if they had growth

potential. If these assets earn less than the cost of capital, the value of adding new assets will be negative and reinvestment will lower the value of the firm.

We can actually go further. If we viewed divestitures as reductions in capital invested, the reinvestment rate for a declining firm can be negative in future years, which will lead to negative growth rates, at least for the foreseeable future. Analysts who have learned their valuation fundamentals at healthier companies often are uncomfortable with the notion of negative earnings growth rates and cash flows that exceed earnings, but that combination will characterize many declining firms.

Discount Rates

If the cost of capital is a weighted average of the costs of debt and equity, what is it about declining firms that makes it difficult to estimate these numbers? First, the large dividends and buybacks that characterize declining firms can have an effect on the overall value of equity and on the debt ratios that we use in the computation. In particular, returning large amounts of cash to stockholders will reduce the market value of equity, through the market price, with dividends, and the number of shares, with stock buybacks. If debt is not repaid proportionately, the debt ratio will increase, which will then affect the costs of debt, equity and capital.

Second, the presence of distress can have significant effects on both the cost of equity and debt. The cost of debt will increase as default risk increases and some rated firms will see their ratings drop to junk status – BB, B or lower. If operating earnings drop below interest expenses, the tax benefits of debt will also dissipate, leading to further pressure upwards on the after-tax cost of debt. As debt to equity ratios climb, the cost of equity should also increase, as equity investors will see much more volatility in earnings. From a measurement standpoint, analysts who use regression betas, which reflect changes in equity risk on a lagged basis, may find themselves facing the unusual scenario of a cost of equity that is lower than the pre-tax cost of debt.

Terminal Value

To estimate the terminal value, we first estimate a growth rate that a firm can sustain forever, with the caveat that the growth cannot exceed the growth rate of the economy, with the risk free rate acting as a proxy. We follow up by making reasonable assumptions about what a firm can generate as excess returns in perpetuity and use this number to forecast a reinvestment rate for the firm. We complete the process by estimating a discount rate for the terminal value computation, with the qualifier that the risk parameters used should reflect the fact that the company will be a more stable one.

At each stage of this process, declining and distressed firms pose special challenges. At the first stage, we have to consider the possibility, which will be significant, that the firm being valued will not make it to stable growth; many distressed firms will default and go out of business or be liquidated. Even if a firm is expected to survive to reach steady state, the expected growth rate in perpetuity will not only be well below the growth rate of the economy and inflation, but in some cases, it can even be negative. Essentially, the firm will continue to exist but get progressively smaller over time, as its market shrinks. At the second step, the biggest estimation issues we face will arise with declining firms that are earning well below their cost of capital currently, with no reason for optimism about the future. In effect, the most reasonable assumption to make about this firm may be that it will continue to earn a return on its capital that is below the cost of capital in perpetuity. This will have consequences for both reinvestment and the terminal value. Finally, the problems that we mentioned in the previous section relating to discount rates can spill over into the terminal value computation. In other words, a distressed firm can have sky-high costs of equity and debt at the moment and leaving these numbers at or even close to current levels can cause terminal values to implode.

From Operating Assets to Equity Value per Share

While the process of getting from operating assets to equity value per share follows the standard script – add cash and other non-operating assets, subtract debt outstanding and the value of any equity options granted by

the firm (either in financing or to management) and divide by the number of shares outstanding – there are two problems that we face, especially with the distressed sub-set of declining firms.

The first is a familiar problem that we have run into with firms earlier in the life cycle that are losing money, which is that the cash balance of a firm today may bear little resemblance to the cash balance reported in the balance sheet. Declining firms with negative earnings can very quickly deplete cash balances and failing to account for this will result in an over valuation of equity.

The second (is that the market value of debt in distressed firms will trade or be valued) at a discount to the book value. This is not surprising, since the debt was borrowed and recorded in past periods, when the firm was healthy, and now that default risk has risen, that debt will have a lower value. Note that this is true, even if the firm has no corporate bonds, but has only bank loans outstanding; the difference is that the drop in value will be visible with bonds, since they are traded, and implicit with bank loans, which are not.

The third troublesome component in estimating equity value is that the line between debt and equity in a distressed firm is a gray one. Not only does distressed debt take on the characteristics of equity on its own, but lenders often demand and get equity stakes either in the form of equity options or as privileges to convert to equity. These equity options have to be valued and netted out from overall equity value to arrive at the value of common stock. In fact, debt renegotiation talks at distressed firms can alter the debt, equity option and common stock numbers in the firm overnight. When a large lender agrees to accept shares in the company in exchange for the debt, the consequences for the value of equity per share are unpredictable.

Relative Valuation

Analysts who fall back on relative valuation as a solution to the problems of valuing declining or distressed firms, using intrinsic valuation, will find themselves confronting the estimation issues that were listed in the earlier sections either explicitly or implicitly when they use multiples and comparables.

- i) ***Scaling Variable***: All multiples have to be scaled to common variables, which can be broadly categorized into revenues, earnings, book value or sector specific measures. With distressed companies, earnings and book values can become inoperative very quickly, the former because many firms in decline have negative earnings and the latter because repeated losses can drive the book value of equity down and into negative territory. We can scale value to revenues, but we are then implicitly assuming that the firm will be able to turn its operations around and deliver positive earnings.
- ii) ***Comparable Firms***: There are two possible scenarios that we can face when valuing declining firms. One is when we are valuing a declining firm in a business where the remaining firms are all healthy and growing. Since markets value declining firms very differently from healthy firms, the challenge in this case is working out how much of a discount the declining firm should trade at, relative to the values being attached to healthy firms. We face the second scenario when we are valuing a declining/distressed firm in a sector where many or even all of the firms share the same characteristic. In this case, not only do our choices of what multiple to use become more limited, but we have to consider how best to adjust for the degree of decline in a firm. For instance, in early 2009, Ford, GM and Chrysler all showed signs of distress but GM was in the worst shape, followed by Chrysler and Ford.
- iii) ***Incorporating Distress***: While analysts often come up with creative solutions to the first two problems – using multiples of future earnings and controlling for differences in decline, for instance – the presence of distress puts a wild card in the comparison. Put another way, when firms are not only in decline but are viewed as distressed, we should expect those firms that have a higher likelihood of distress to trade at lower values (and hence at lower multiples) than firms that are more likely to make it. Unless we explicitly control for distress, we will find ourselves concluding, based on relative valuation, that the first group of firms are undervalued and the second growth over valued.

Therefore, any issues that skew intrinsic valuations also skew relative valuations. The symptoms of decline –

negative growth rates, poor or negative margins, flat revenues- and the potential for failure – caused by too much debt and declining earnings – will not disappear as issues just because we base our value on a revenue multiple.

VALUATION UNCERTAINTY

Valuation uncertainty is defined as- The possibility that the estimated value may differ from the price that could be obtained in a transfer of the same asset or liability taking place at the same time under the same terms and within the same market environment.

It is important to note that a valuation is not a fact; it is an estimate of the most probable of a range of possible outcomes based on the assumptions made in the valuation process. Market valuations are estimates of the most probable price that would be paid in a transaction on the valuation date. However, even where assets are identical and exchanged in contemporaneous transactions, fluctuations in the prices agreed between different transactions can often be observed. These fluctuations can be caused by factors such as differences in the objectives, knowledge or motivation of the parties. Consequently, an element of uncertainty is inherent in most market valuations as there is rarely a single price with which the valuation can be compared.

In some cases the degree of uncertainty is clearly negligible, for example where the valuation is made by reference to concurrent prices for identical assets in the same market, as in the case of publicly listed and frequently traded securities. In others, uncertainty may be immaterial in the context of the market for a particular asset or the valuation assignment because it falls within the range that would be expected, and accepted, by most market participants. Such uncertainty should not be a source of concern to users or need specific disclosure by the valuer.

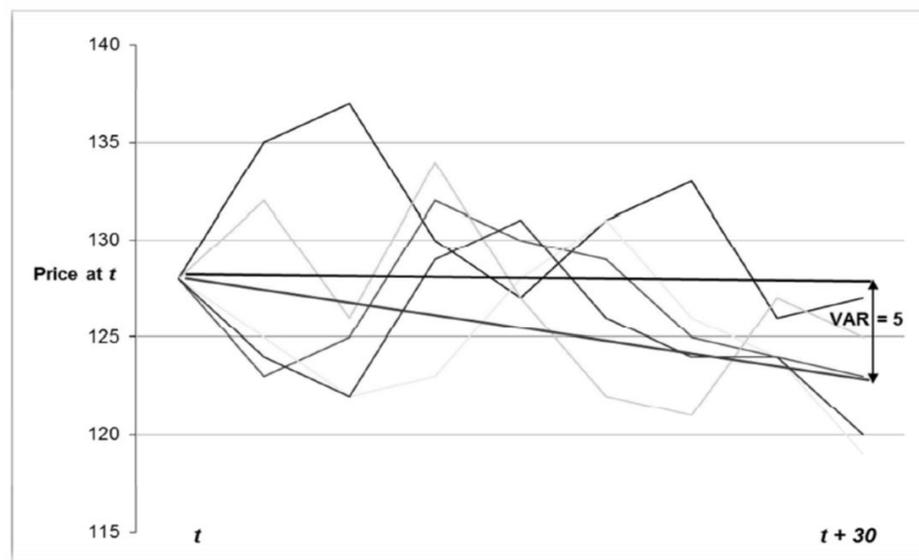
Valuation uncertainty should be distinguished from uncertainty risk. The possibility that the estimated value may differ from the price in an actual transaction deemed to be taking place simultaneously means that the value may be higher or lower than that price. An owner of the asset is exposed to a risk of loss (uncertainty risk) but also the benefit of a gain if the price is higher than the valuation.

The causes of uncertainty can be attributed to the following factors:

- i) ***Material Uncertainty***: Material uncertainty can be caused by various factors. These are divided into the following categories, i.e., Market Uncertainty; Model Uncertainty and Input Uncertainty. A brief description of the mentioned uncertainties is as under-
 - a) The critical facets of 'Market Uncertainty' are as under:
 - 1) Market uncertainty arises when a market is disrupted at the valuation date by current or very recent events such as sudden economic or political crises. The disruption can manifest itself in a number of ways for example either through panic buying or selling or by a loss of liquidity due to a disinclination by market participants to trade. An outbreak of sudden trading activity in response to a crisis may cause rapid price changes that are not necessarily representative of those that would be agreed between parties acting "knowledgeably and prudently". Conversely, a loss of liquidity will mean fewer contemporaneous or relevant recent transactions which may impact on the reliability of the valuation.
 - 2) Events causing market uncertainty may be macroeconomic, e.g. the terrorist attacks of September 11th 2001 or the Lehman Brothers insolvency in 2008, or microeconomic, e.g. an unexpected change in the law disrupting a sector of the market or disruption to the supply chain of an industry.
 - 3) Such events create valuation uncertainty, because the only inputs and metrics available for the valuation are likely to relate to the market before the event occurred and the impact of the event on prices will not be known until the market has stabilised.

- 4) Market uncertainty should not be confused with market risk. Market risk is the risk that an asset may lose value over time due to changes in market conditions that occur after the valuation date. The possibility of market conditions changing in the future and the potential for the price of an asset to be affected by those changes is something that is considered by market participants when negotiating a transaction and will be reflected in market prices.
- 5) Market risk can be measured by calculating, for example, the value at risk. The graph below gives a simple example of a publicly traded blue chip stock listed on more than one exchange. It can be observed from exhibit 2 that the market price of the stock fluctuates over time. The value at risk for a shareholder for one month is the maximum expected loss under a certain confidence interval due to changes in market price of the stock during that month.

Exhibit 2



The red line shows the value at risk (VaR) for one month associated with a blue chip stock, based on the mean of observed price fluctuations in the stock over previous thirty day periods represented by the other lines. There is negligible uncertainty attaching to a valuation of 128 at time “t” because all contemporaneous transactions at that time are either at this price or very close to it, but the value at risk over the next 30 days is about 5.

Source: *International Valuation Standards Council*

- 6) Although there may be many fluctuations in price over a given period, because under normal market conditions blue chip shares are actively traded there would be hardly any market or valuation uncertainty on a given date. The stock is quoted on public exchanges and traded in high volumes on a daily basis. The risk of the actual exchange price significantly differing from a near contemporaneous quotation or valuation is close to zero.
 - 7) Market uncertainty and market risk are therefore independent of each other. A valuation of a highly liquid quoted stock has little uncertainty but can still reflect high market risk. The valuation of an illiquid fixed income bond may be uncertain due to lack of recent evidence, but may reflect low market risk.
 - 8) In contrast to market risk, market uncertainty is not measurable because the uncertainty arises from the inability to observe the impact of the event on prices.
- b) The critical facets of ‘Model Uncertainty’ are as under:

- 1) Model uncertainty arises from characteristics of either the valuation model, or method, used. For certain asset types, more than one method may be customarily used to estimate value. However, those models may not always produce the same outcome and therefore the selection of the most appropriate method may of itself be a source of uncertainty.
 - 2) IVS 102 Implementation, para 7 provides that where more than one valuation approach or method is used the resulting indications of value should be analysed and reconciled to reach a valuation conclusion. However, this is a heuristic process which will enable the valuer to understand the reasons why the methods produce different results. It may not lead to a mathematical reconciliation of the results, and therefore the valuer will need to justify which method should be given greater weight in arriving at the valuation conclusion. Where there is no clear reason to prefer one method over another but each produces a different result model uncertainty arises.
 - 3) Model uncertainty can be measured by observing the effect on the valuation of using different models or methods.
- c) The critical facets of 'Input Uncertainty' are as under:
- 1) Input uncertainty arises where there are a number of equally reasonable or feasible inputs or assumptions that can be used from the degree of veracity that can be attached to the data inputs used in the valuation and their impact on the outcome. Examples of input uncertainty include:
 - Where the input is taken from consensus data or a composite of market data, there will normally be a range between which the market value can fluctuate.
 - Where inputs are based on historic data, the assumptions or methods used to adjust the data to market conditions at the valuation date can be a source of uncertainty.
 - Where inputs are estimated or extrapolated from directly observable prices, uncertainty can result from the adjustments made for differences in the assets or the transaction, particularly where there is little or no objective evidence for the adjustments.
 - 2) Input uncertainty can be measured by the effect on the valuation of using reasonably possible alternative inputs.
 - 3) The valuation method used may adjust for input uncertainty. For example, in a discounted cash flow model the cash flow inputs are based on current expectations of future performance and are therefore uncertain. However, market participants' views of the potential risk or reward implied by the expected cash flows differing from those that actually occur in the future should be reflected in the discount rate applied. Consequently, inputs based on current expectations of future performance are not automatically a source of material valuation uncertainty.
 - 4) The valuation method used may adjust for input uncertainty. For example, in a discounted cash flow model the cash flow inputs are based on current expectations of future performance and are therefore uncertain. However, market participants' views of the potential risk or reward implied by the expected cash flows differing from those that actually occur in the future should be reflected in the discount rate applied. Consequently, inputs based on current expectations of future performance are not automatically a source of material valuation uncertainty.
 - 5) In some situations the effect of input uncertainty may be ameliorated by the use of statistical

sampling techniques to analyse and weight the range of available data before it is applied in the valuation model. However, input uncertainty can also arise where reduced liquidity or reduced market activity result in a reduction in the relevant data available to provide empirical support for valuations.

It is to be noted that the causes of valuation uncertainty discussed above are not mutually exclusive. For example, there is a link between model and input uncertainty as different models may use different inputs that are subject to different degrees of uncertainty. Also, an asset may be affected simultaneously by market, input and model uncertainty.

Interdependence and correlation between uncertainty factors are therefore likely to exist and account should be taken of this as part of the valuation process. The question of measurement and reporting of uncertainty is addressed in later sections of this paper.

As far as materiality is concerned, the following points are noteworthy:

- i) IVS 103 Reporting, para 2 requires the valuation report to set out a clear and accurate description of any material uncertainty that directly affects the valuation. As indicated in para 6 most valuations contain an element of uncertainty but it is only to be disclosed when it is “material” and has a direct effect on the valuation. A requirement to discuss and disclose uncertainty in all cases would over complicate the reporting of many valuations, and potentially raise unwarranted concern as to the reliability of the valuation opinion, which would not be helpful to users. It is therefore necessary to consider whether uncertainty is material. Materiality should be considered from two aspects; first whether the impact on the valuation figure is significant and second whether it is of concern to a user of the valuation having regard to the purpose for which it is required.
- ii) In considering whether the impact of the uncertainty is significant, regard should be had to the impact on the overall potential profits or risk of loss to which either the owner of the asset or a third party relying on the valuation is exposed as a result of the uncertainty. This cannot be expressed in absolute terms but will vary depending on the purpose of the valuation and the nature of the asset.
- iii) Even if it is judged that the uncertainty could have a significant effect on the reported valuation, whether this is a matter of relevance to a user will vary depending factors such as:
 - whether the valuation is required for internal purposes by the commissioning party or whether it will be disclosed to and relied upon by third parties. The threshold of materiality is likely to be lower if the valuation is to be relied on by third parties;
 - whether it is the only asset in which the users of the valuation are interested or whether it is part of a portfolio in which the other assets are not affected;
 - whether the cause of the uncertainty was known to the commissioning party or a third party relying on it when the valuation was commissioned.
 - whether the effect of the uncertainty could expose the commissioning party or a third party relying on the valuation to significant risk of loss.
- iv) When a valuation is being prepared for financial reporting, the relevant accounting standard often stipulates when an uncertainty disclosure is required. For example IFRS 13 Fair Value Measurements has extensive disclosure requirements.

IFRS 13 Fair Value Measurement applies to IFRSs that require or permit fair value measurements or disclosures and provides a single IFRS framework for measuring fair value and requires disclosures about fair value measurement. The Standard defines fair value on the basis of an «exit price» notion and uses a «fair value hierarchy», which results in a market-based, rather than entity-specific, measurement.

IFRS 13 was originally issued in May 2011 and applies to annual periods beginning on or after 1 January 2013.

- v) IFRS 13 sets out a “fair value hierarchy” of Levels 1, 2 and 3, see G4 and G5 of the Application Guidance to IVS 300. It will be noted that the disclosures required by IFRS 13 section 93 only apply where Level 3 inputs are used. These are “unobservable inputs” which are defined in the IFRS as inputs for which market data are not available and that are developed using the best information available about the assumptions that market participants would use when pricing the asset or liability.
- vi) Where Level 3 inputs have been used, the IFRS only requires a narrative description of the sensitivity of the valuation to changes in these inputs if this would result in a significantly higher or lower figure.
- vii) For financial instruments slightly different criteria need to be considered. Firstly the alternative inputs considered must be “reasonably possible”. If it is decided that these alternatives are reasonably possible and that they would result in a significant change to the value then it is necessary to calculate the effect of that alternative input. Significance is judged by reference to total assets and liabilities or to total equity.
- viii) For valuation purposes other than financial reporting under IFRS it is important to recognise that valuation uncertainty can and does affect valuations that use inputs that would be classified in either Level 1 or Level 2 in the IFRS 13 hierarchy and the fact that an explicit disclosure is not required for financial reporting does not mean that a disclosure may not be required to comply with IVS 3.
- ix) Whether a potential alternative input is “reasonably possible” can be a useful concept to help determine whether valuation uncertainty is material for purposes other than valuations under IFRS 13. The term is not defined in IFRS 13 and no specific quantitative probability level is implied. What is, or is not, reasonably possible will depend on the facts of each situation and requires judgement. From a valuation perspective a key consideration would be the distribution pattern and spread of potential alternative inputs. If the data follows a normal pattern of distribution, or bell curve, data in the tails could be usually be safely disregarded as falling outside the range of being reasonably possible. However, other distribution patterns may mean that greater weight may need to be given to certain outliers.
- x) Although model or input uncertainty is less likely to arise where the inputs would fall within Levels 1 or 2 if being undertaken for financial reporting under IFRS, any of the levels in the IFRS hierarchy could be affected by market uncertainty. For example a listed blue chip stock may still be affected by a sudden decrease in trading activity and abnormal levels of price volatility immediately following a market shock.

Nature of Disclosure

- i) If valuation uncertainty is deemed to be material the next question to be addressed is whether the disclosure to it in the valuation report should be only qualitative, i.e. descriptive, or whether a quantitative, i.e. numeric, indication of the uncertainty should also be provided.
- ii) The requirement in IVS 3 is to provide “a clear and accurate description” of any material uncertainty. This indicates that a qualitative description should always be provided for all valuations for whatever purpose where any identified uncertainty meets the materiality criteria. This requirement is also consistent with IFRS 13. As can be seen from the extract above a narrative description of the sensitivity

of the fair value measurement to changes in the inputs must be provided, for all valuations which meet the criteria listed.

- iii) A qualitative description of valuation uncertainty should explain the source of the uncertainty, the effect that this has on the market, the valuation process or both. In the case of market uncertainty it may be possible to comment on any consensus view on how long it may be until the effect of the event can be assimilated and stability returns to the market. In the case of model or input uncertainty a description of the reason why the selected models or inputs were used can be provided.
- iv) The question of whether a numeric indication of the effect of the uncertainty should be also provided is more problematic. Valuation uncertainty often arises because of either a shortage or lack of empirical data inputs to support the valuation. Where this is the case, providing a quantitative statement of uncertainty may be unrealistic, as if the data needed to quantify the uncertainty is available then it could have been used to reduce the uncertainty in the valuation process.
- v) A related potential problem in providing a quantitative measure of uncertainty is to avoid implying a false precision. While it may be possible to provide a quantitative measure by using an alternative input, by definition that input must be one considered to be less probable or relevant than the one used in the reported valuation. For this reason it is always appropriate to provide a verbal explanation of the uncertainty and any quantitative illustration of the possible effect of that uncertainty.
- vi) A simplistic expression of valuation uncertainty might be to provide a range within which the value is considered to fall. However, this is not recommended for the following reasons:
 - For many valuation purposes a single valuation figure is required and a range would not be acceptable.
 - Determining the extremes of the range may also be unrealistic because the very factor that created the uncertainty in the first place is likely to mean that previously observed price fluctuations will no longer be relevant.
 - Users may assume that an equal probability attaches to any outcome within the range when this might not be the case.
 - Users may assume that there is no possibility of a valuation falling outside of the indicated range.

Measuring Uncertainty

The following points need to be focused upon while gauging uncertainty-

- i) While caution is required in presenting any numeric indication of uncertainty, there are circumstances where this can be reasonably provided and be useful to a user of the valuation. Input uncertainty may be measureable by observing the effect on the valuation of either an alternative model or input.
- ii) The value of financial instruments is dependent upon the amount, timing and security of future cash flows between the counter parties. Variations in these mainly numeric inputs over a fixed time horizon are more readily measureable than those that might be involved in the valuation of other types of tangible or intangible assets held for an indefinite period, such as the comparative quality or utility of the asset or its potential for an alternative use.
- iii) Where the value of a financial instrument is uncertain because there is no market data available for an identical or similar instrument it is necessary to make an estimate of certain inputs into the valuation based on the assumptions that a market participant might make. In these circumstances it is more likely that two or more alternative figures that could be reasonably be chosen for a key input into the calculation. Where this occurs it is recommended that the reported valuation is based on the most

likely of these outcomes, but a sensitivity analysis is provided showing the effect of the range possible outcomes on the reported value.

- iv) The principle of quantifying uncertainty by the use of a sensitivity analysis can also be applied to assets other than financial instruments where there were a number of reasonably possible alternative numeric inputs that could have been selected on the valuation date.
- v) To establish what might be considered a reasonably possible alternative input, statistical techniques may be used, although if there is market uncertainty at the valuation date the relevance of input ranges based on previous fluctuations may be of limited relevance.
- vi) If a quantitative measure of valuation uncertainty is to be provided, the following principles should be considered and applied as appropriate:
 - ❖ A quantitative measure should always be accompanied with a narrative describing the cause and nature of the uncertainty. A purely numeric illustration will only confirm uncertainty, not explain it. There is no useful purpose served by providing such a quantitative expression of uncertainty if this will not result in a better understanding of the valuation by the user.
 - ❖ Quantifying valuation uncertainty does not involve forecasting a worst case scenario. The objective is not to stress test a valuation to an extreme case. Any test of valuation uncertainty should address the impact on the reported value of reasonable and likely alternative assumptions. When choosing alternative assumptions to measure uncertainty, selection needs to be made among possibilities that are not located in the tail of the distributions (where events are very unlikely to happen) but rather in their central areas (where events are likely to occur).
 - ❖ The objective of any uncertainty analysis is not to provide a forecast of possible fluctuations in the reported value at future dates but to provide information about the variability of fair value measurement at the specific valuation date.
 - ❖ When quantifying the impact of uncertainty the interdependence or correlation between significant inputs needs to be considered when it is practical to do so. Incorporating correlation analysis is technically and operationally challenging and potentially costly; but an analysis that does not consider interdependence provides less relevant information to users. When uncertainty is measured without proper correlation of interdependent inputs the degree of uncertainty may be overestimated.
 - ❖ When measuring a portfolio of financial instruments, interdependence and potential netting effects across products should be considered.. However, such analysis should complement, rather than be a substitute for, a disaggregated asset by asset uncertainty measurement. The reason is that potential netting effects across assets are only relevant when a transaction of all the products of the portfolio takes place at the same time.

DISTRESSED ASSETS – THE INDIAN SCENARIO

The Indian banking sector is an exemplar of distressed assets which has been witnessing blow after blow in asset quality management on account of multiple large and small scale projects ran into hurdles along the way, such as, poor evaluation of project, extensive delays in project, poor monitoring and poor accounting leading to cost overruns, which disallowed the borrowers from repayment of their loans. Mostly the public sector banks suffered severe impacts and there was a slowdown in growth of credit.

Therefore, the RBI, following the European Central Bank's (ECB) tests on supervising the Euro banks after the big financial crisis, came up with certain effective measures to remedy the situation and deal with distressed assets before it's too late. Such efficacious methods to lower the stress of distressed assets include lowering the financial stress of the project such as the JLF, the SDR technique (necessitating the banks' debt-for-equity

swap process and change of management in companies), and the 5/25 mechanism (so that loans for long-term projects, such as infrastructure industries and core industrial sectors, are refinanced every 5 years when they have a tenure of 25 years or above).

Further, in order to make an assessment of how effectively the 'Bad Loan Management Schemes', drawn up by the bank Boards individually, were working and in order to make sure that the banks were taking proactive measures to clean up balance sheets, the RBI launched an Asset Quality Review (AQR) as a part of the bank's mandate to improve the banking sector, clean up bad loans and boost the quality of their balance sheets by March 2017.

Coming to the sale of distressed assets, in 2016, a Data Report by Thompson Reuters Eikon shows that Indian Companies' distressed assets sales have been the highest in the year of 2016 since the liberalization of the Indian Economy. 2016 has seen sale of distressed assets valued at a total of \$40.85 billion. A comprehensive chart of the data as collected from 1986 till 2016 (November 7th) has been provided in exhibit 3 . This data by Reuters covers the Indian companies' tangible assets, branches, divisions, operations as well as subsidiaries sold off by parent companies.

Exhibit 3



Source: Data Report by Thompson Reuters Eikon as on 7th November, 2016.

The sale of distressed assets, as noted earlier, also covers liquidation of companies and bankruptcy of companies. Exhibit 4 shows the top 10 Indian Companies that have been in the Reserve Bank of India (RBI) defaulters' list in 2016 (as of April 1, 2016).

Exhibit 4

Top 10 Indian Companies that have been in the Reserve Bank of India (RBI) defaulters' list in 2016 (as of April 1, 2016)

Company	Industry	Outstanding Amt (Cr.)	Wilful Defaults	Listed	Key Creditor (Amt. – Cr.)	Company Status
Usha Ispat	Metals, Mining	16911	5093	Trading Suspended, 2007	LIC (8619)	----
Lloyds Steel	Steel	9478	6309	Yes	BOI (6724)	Acquired by Uttam Galva Group
Hindustan cables Ltd.	Telecom cables	4917	0	No	BOI (2439)	Winding Up
Hindustan Photofilms MFG Co.	Photo films	3929	0	No	LIC (1781)	Wound Up
Zoom Developers	Real Estate	3843	137	No	Oriental Bank of Commerce (524)	---
Prakash Industries	Mining, Steel & Power	3665	2233	Yes	LIC (2171)	Operational
Cranes Software International	IT	3580	2505	Yes	BOI (3443)	Operational
Prag Bosimi Synthetics	Textile	3558	0	Yes	IDBI (848)	Operational
Kingfisher	Aviation	3259	0	No	PNB (672)	Wound Up
Malvika Steel	Steel	3057	0	No	GIC (2490)	Wound Up

Source: iPleaders

The exhibit 5 shows the top 10 Indian Companies that have been in the State Bank of India (SBI) defaulters' list in 2016 (as of June 30, 2016). These companies, by reason of unpaid debts and bankruptcy, have had their distressed assets sold at comparatively low prices and is fairly responsible for the distressed asset sale boom in 2016 as provided in the Reuters Data. Such companies are also known as '**wilful defaulters**'. A **Wilful Defaulter** is defined by the RBI as a unit (like a corporation in this case) which has defaulted in making payment or repayment / meeting its payment or repayment obligations to the creditor / lender (mostly banks, LIC, etc.) even when it has the capacity to honour the obligations in question.

Exhibit 5

Top 10 Indian Companies that have been in the Reserve Bank of India (RBI) defaulters' list in 2016 (as of April 1, 2016)

Name of Company (Wilful Defaulter) and State	Outstanding Amount (In Crore)
Kingfisher Airlines (Karnataka)	1201.19
Agnite Education Ltd. (Tamil Nadu)	315.45
Shreem Corporation Limited (Maharashtra)	283.08
First Leasing Co. of India Ltd (Tamil Nadu)	235.29
Teledata Mareen Solution P Ltd (Tamil Nadu)	166.85
Harman Milkfood (Punjab)	148.16
PKS Limited (West Bengal)	144.61
JB Diamonds (Maharashtra)	140.96
Zenith Birla (India) Ltd (Maharashtra)	139.59
MP Shan Text. Pvt. Ltd. (Tamil Nadu)	129.48

Source: *iPleaders*

Procedure of Sale OF Distressed Assets – Current RBI Guidelines on Sale of Distressed Assets by Banks

The RBI has on 1st September, 2016, issued a notification on “Guidelines on Sale of Stressed Assets by Banks” as a part of the already existing “Framework for Revitalising Distressed Assets in the Economy”. The framework and guideline have been created as a part of the enforcement of and regulations under the *Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002* (SARFAESI Act).

The Framework covers the sale of financial assets, procedure and norms to be followed during such sale, reasonable valuation of the assets and powers of functionaries and other such persons regarding the decision making procedure towards such sale.

- i) Identifying distressed assets beyond a specified economic value (as determined by the bank) and Special Mention Account classified assets for sale shall be a decision to be taken by the bank’s corporate head office so as to ensure a proper value realisation for the bank by virtue of early identification of such assets.
- ii) The banks are required to identify and prepare an internal list of the assets that are to be put on sale to FIs, ARCs and SCs. This identification procedure should be held at least once every year, ideally, when the year begins and take approval from their Board prior to it.
- iii) The minimum rate at which the ‘doubtful asset’ is to be sold should be reviewed on a periodic basis by the Board / the Board Committee. A view and a documented rationale should be taken on the exit / sale of such asset. As per the above provisions, the assets that are identified for sale should be listed for the purpose of sale.
- iv) It is not necessary that prospective buyers of distressed assets be restricted to ARCs or SCs. Banks may offer assets to other banks / NBFCs or Financial Institutions with the necessary capital and expertise in resolution of distressed assets. In fact, participation of more buyers entails a better price discovery for the assets.

- v) Since a wide range of buyers are to be attracted, there should be public solicitation of invitation for bids so as to ensure maximum participation from prospective buyers. It is desirable that an e-auction platform be used in such a situation so that there is ease in conducting the auction sale. Further, the auction should be an open process so that there is better price discovery. Banks are required to formulate and lay down policies approved by the Board in this case.
- vi) The banks are required to provide the prospective buyers an adequate time (with a floor of 2 weeks depending on the size of the assets) for due diligence in determining the authenticity of all documents involved, discover frauds, determine the best price according to the market, etc.
- vii) It is required of the banks to have clear and unambiguous policies with due considerations for the valuation of assets that are to be sold at the auction. There must be clear specifications as to internal valuation acceptance and need for external valuation. However, where the exposure is beyond Rs. 50 crores, the bank is required to obtain two external valuation reports.
- viii) The costs of such abovementioned valuation exercises are required to be borne by the bank so as to ensure the protection of the interests of the bank.
- ix) The rate of discount used by the banks in the valuation procedure has to be spelt out and mentioned in the policy. This may either be the cost of equity or the average cost of funds or opportunity cost or any other relevant rate, subject to a floor of the interest rate which was contracted along with any penalty which may be there.

Further, the Framework also provides for restriction on investment by banks themselves in security receipts which are backed by assets sold by them so as to ensure 'true sale' of distressed assets and creation of a vibrant distressed assets market, disclosure of investments on security receipts, debt aggregation (where a bank offering the distressed assets for auction sale offers the first right of refusal to the ARCs and SCs that have already acquired the highest and a significant share, matching the highest bid), Swiss challenge method (for placing the Board Approved Policy for auction in light of Paragraph 2 of the annex of the circular) and buy back of financial assets (The guidelines of the RBI do not prohibit banks from taking over certain standard accounts from ARCs and SCs).

Thus, where the ARCs and SCs have successfully executed a scheme for restructuring the distressed assets acquired by them, the banks, using due diligence, have the option to take over such assets after the 'specified period', subject to the account performing satisfactorily during such 'specified period'. Further, banks may frame a policy approved by the Board which contains multiple aspects governing such take over such as type of assets, due diligence requirements, viability criteria, performance requirement of asset, etc. However, it is to be noted that a bank can never take over from ARCs and SCs the assets that they have themselves sold earlier.

To sum up, the following factors could be attributed to the distressed assets scenario

- Excessive amounts of leverages and over-investments during strong economic phases;
- A steady and persistent economic slowdown after the Financial Year of 2011, thus, impacting corporate demand;
- An ease of access to the external debt market and depreciation of the value of the Indian Rupee;
- Industry-specific issues, such as issues peculiar to mining / infrastructure / textiles / aviation / iron & steel, to name a few, which added to the distressed asset issue within the banking sector.

SUMMARY

Features of Declining Companies

- ✓ Stagnant or declining revenues
- ✓ Shrinking or negative margins
- ✓ Asset divestitures
- ✓ Big payouts – dividends and stock buybacks
- ✓ Financial leverage – the downside

Valuation issues of Declining Companies

1. Valuation issues pertaining to Existing Assets- Earning less than cost of capital and Divestiture effects
2. Regarding Growth Assets, since firms derive little from growth assets, and so the valuation of these assets should not have a substantial impact on value.
3. With reference to the discount rates, the large dividends and buybacks that characterize declining firms can have an effect on the overall value of equity and on the debt ratios that we use in the computation.
4. As far as Terminal Value is concerned, we first estimate a growth rate that a firm can sustain forever, with the caveat that the growth cannot exceed the growth rate of the economy, with the risk free rate acting as a proxy.
5. Two major problems faced under 'From Operating Assets to Equity Value per Share' are- first, there may be cases of firms, which may in their earlier life cycle start losing money, thereby, the cash balance of a firm today may bear little resemblance to the cash balance reported in the balance sheet. Second, second (is that the market value of debt in distressed firms will trade or be valued) at a discount to the book value and third, troublesome component in estimating equity value is that the line between debt and equity in a distressed firm is a gray one.
6. In case of Relative Valuation, the following factors needs to be focused upon- Scaling Variable; Comparable Firms and Incorporating Distress.

Valuation Uncertainty is defined as- The possibility that the estimated value may differ from the price that could be obtained in a transfer of the same asset or liability taking place at the same time under the same terms and within the same market environment.

Factors responsible for Distressed Assets scenario in India -

- Excessive amounts of leverages and over-investments during strong economic phases;
- A steady and persistent economic slowdown after the Financial Year of 2011, thus, impacting corporate demand;
- An ease of access to the external debt market and depreciation of the value of the Indian Rupee;
- Industry-specific issues, such as issues peculiar to mining / infrastructure / textiles / aviation / iron & steel, to name a few, which added to the distressed asset issue within the banking sector.

SELF-TEST QUESTIONS

- Q1. In Indian context, analyse 'Declining Companies' of the following sectors in light of its features:
- Banking and Financial Services
 - Steel
 - Power
 - Cement
 - Real Estate
- Q2. Suggest ways to surmount the challenges involved in valuation issues of 'Declining Companies'.
- Q3. Elucidate the various forms of uncertainties involved in valuation and the approach needed to be embraced (taking case of some sectors) to minimize them

LIST OF FURTHER READINGS

- Valuation: Measuring and Managing the Value of Company, University Edition (Wiley Finance) by Mckinsey & Company Inc. and Tim Koller.
- Valuation: Measuring and Managing the Value of Companies (Frontiers in Finance Series) by Tom Copeland and Tim Koller.
- Valuation for M&A: Building and Measuring Private Company Value (Wiley Finance) by by Chris M. Mellen and Frank C. Evans
- Valuation: Measuring and Managing the Value of Companies + DCF Model Download (Wiley Finance) by McKinsey & Company Inc. and Tim Koller.
- Valuation Course: An Introductory Course to Measuring the Value of Companies (Wiley Finance) by Barbara Schwimmer and Franziska Manoury.
- The Dark Side of Valuation (Third Edition), Valuing Young, Distressed and Complex Business by Aswath Damodaran.
- Guide to Business Modelling by Graham Friend and John Tennent, publisher- The Economist.
- Guide to Analyzing Companies by Bob Vause (Sixth Edition), publisher- The Economist.

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Lesson 13

Introduction to Business Modelling

LESSON OUTLINE

- Introduction
- Genesis of Business Modelling
- Types of Business Models
- Features of a Sustainable Business Model
- Significance of a Business Modelling
- Usage / Application of Business Models
- Spreadsheet Techniques for Business Models
- Review of Key Excel Functions
- Future Projections and Integrated Financial Statements
- Key Financial Ratios
- SUMMARY
- SELF TEST QUESTIONS

LEARNING OBJECTIVES

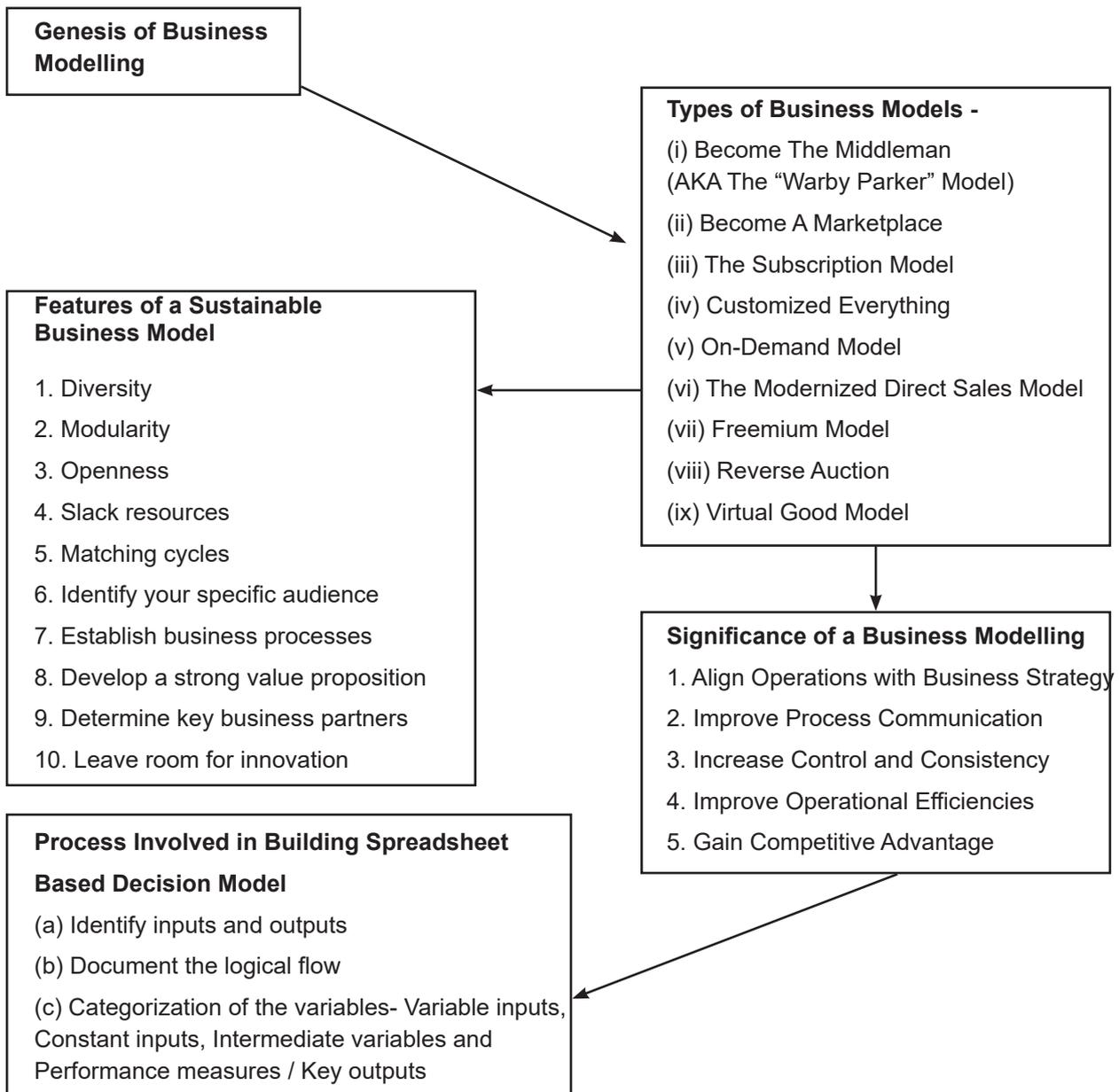
Business Modelling has gained paramount position with the increase in scale of operations of business organizations and various complexities. In view of this, this study lesson makes an endeavour to delve deep into various critical facets pertaining to the business modelling. This study lesson focuses right from the origin of business modelling to the essential concepts like- Significance of Business Modelling; Application / Usage of Business Model; Key Excel Functions pertaining to Finance; Key Financial Ratios etc.

This study lesson aims to develop deep insights regarding the business modelling by delving deep into the mentioned concepts thereby bridging the gap between theory and practice.

ORIENTATION

Looking into the topics covered under this lesson, it demands an expert level knowledge, as this lesson encompasses both basics and applications of business modelling. Without a robust understanding on the topics like, Decisions involving Time Value of Money; Reporting and analyzing of historical data; Preparation of future projections etc. it will be extremely difficult to use business modelling in real life situations.

FAMILY TREE OF CONCEPTS



INTRODUCTION

In business organizations, from self-employed sole traders through to major multinational companies, nearly all new ideas or initiatives demands a financial or commercial evaluation, typically included within a business plan. The analysis is often performed through the creation of a business model in a spreadsheet package. Unfortunately, great business ideas do not always receive the support they deserve. The business model that

provide the commercial justification for the idea are often abysmally structured and, in some cases, simply inaccurate. The result is a misleading view of the financial strength of the idea.

Thus, guidance is highly required for the development of business models that is pertinent to all sizes of organization and business modelling situations. A robust business model examines all the common facets of a business model, like, forecasting the size of a market and managing stock and working capital through to developing a profit and loss account and a balance sheet and even valuing a company.

Models can be used to assist with all forms of business decisions. In today's complex and ever changing business environment, firms may have a wide variety of strategic and operation choices. A business model assist managers to explore complex choices, using sets of assumptions to represent alternative future operating environments. It also helps to develop a clearer understanding of the inherent pattern of relationship between the variables and the probable outcomes. In the end, it is the judgment of the decision-makers that is significant, but a well-designed model can make the exercise of that judgment easier. A model can assist with all three stages of decision-making, i.e. analysis, choice and implementation.

Analysis- A business model will become a virtual reality representation of how a real business opportunity will develop. To enable this virtual world to be as realistic as possible it requires to be logically constructed from a set of assumptions that covers each influencing factor. These factors include both the business environment (for instance, inflation, potential customers and taxes) and the organization (for example, product prices, staff numbers and product volumes).

Often it is only during the process of building the model that it becomes possible to comprehend some of the complexities of the project and how various attributes and external factors relate to each other. The success of any business modelling project depends on getting the various presumptions and relationships (or at least the essential ones) as precise as possible. Careful and critical analysis of which attributes and factors calls for modelling and how they link or may link to each other is fundamental. It may be establishing the relationship between price and sales, or it may involve facts that are harder to pin down, like, the effect of weather patterns or changes in fashion.

Choice- To comprehend the real potential of a business opportunity a business model should be designed in a way that will allow the impact of alternative assumptions and scenarios to be explored. Through the flexing of assumptions (for instance, an enhancement or decline in the growth of customer numbers) and the methodical examination of alternatives (for example, making or buying of a component) the range of potential results is revealed. Identifying the extent of this range of outcomes enables the model user to understand the potential risk and reward of the whole business opportunity.

The approval or rejection of the business opportunity is then made with the knowledge of the expected outcome and in the light of the financial risks that lie ahead.

Implementation - If the model has been built with adequate detail, such that it shows each of the revenues and costs over the life of the project, it can become the template for the project's budget. Variances in the actual results attained against the ones forecasted by the model will help provide early warnings of unforeseen problems as well as enabling the project's success to be gauged. The lessons learnt from such monitoring should also assist in planning the remainder of the project as well as improving the decision-making process in the future.

Before we delve deep into various concepts of business modelling, it is essential to have a glance of the key components of a business model-

1. **High-level vision:** A basic description of your business model — two or three sentences that are your true north.
2. **Key objectives:** The top goals and how you plan to measure them.
3. **Customer targets and challenges:** The types of customers who will purchase your solution, along

with their exact pain points.

4. **Solution:** The primary way that you solve your customer's problems.
5. **Value:** The core elements of your solution that make it unique and differentiated (and ultimately valuable).
6. **Pricing:** How you will package your solution and what it will cost.
7. **Messaging:** A clear and compelling message that explains why your solution is worth buying.
8. **Go-to-Market:** The channels that you will use to market and sell to your customers.
9. **Investment required:** The costs required to make the solution a success.
10. **Growth opportunity:** The ways that you will grow the business, including key partnerships if you need them.

At this juncture, it is important to go through the definitions of Business Model propounded by various experts.

"Business model is a framework for making money. It is the set of activities which a firm performs, how it performs them and when it performs them so as to offer its customers benefits they want and to earn a profit." (Afuah, 2003).

"Business model is a profit formula, system of business and learning system." (Baden-Fuller & Morgan, 2010).

"Business model is the pattern of economic activity – cash flowing into and out of your business for various purposes and the timing thereof – that dictates whether or not you run out of cash and whether or not you deliver attractive returns to your investors. In short, your business model is the economic underpinning of your business, in all of its facets." (Mullins & Komisar, 2009).

"The business model is a useful framework to link ideas and technologies to economic outcomes." (Chesbrough, 2006).

"A business model is the instrument by which a business intends to generate revenue and profits. It is a summary of how a company means to serve its employees and customers and involves both strategy as well as an implementation." (Debelak, 2006).

"Business model is a mechanism for transformation ideas to revenues through the acceptable costs." (Baden-Fuller & Morgan, 2010).

"Business model is a method for making money in the concrete business environment. It is consisted of key structural and operational characteristics of company – how company earn and create profit." (Wheelen & Hunger, 2008).

"A business model describes operations of company, including all of its components, functions and processes, which result in costs for itself and value for customer." (Watson, 2005).

"Business model defines how a company provide value to customer and transfer payments to profit." (Teece, 2010).

"Business models are, at heart, stories that explain how enterprises work. Like a good story, a robust business model contains precisely delineated characters, plausible motivations and a plot that turns on an insight about value. It answers certain questions: Who is the customer? How do we make money? What underlying economic logic explains how we can deliver value to customers at an appropriate cost?" (Magretta, 2010).

"Business model is the method of doing business by which a company can sustain itself – that is generating revenue. The business model spells-out how a company makes money by specifying where it is positioned in the value chain." (Rappa, 2010).

“A business model describes the logic of how an organization creates, delivers and control value and how money are earned in a company.” (Osterwalder & Pigneur, 2009).

“The business model is a machine for making money, but money is important not only to produce but also to appropriate. Business model visualizes company as a place of decisions and consequences, it is a group of resources and activities in the varying degrees of detail and operational view, which result and serve to offer value to customer.” (Slávik, 2011).

GENESIS OF BUSINESS MODELLING

Business models have been intimately connected with e-business since the rise of the Internet during the late 1990's. Kodama (1999) and Hedman & Kalling 2003 provide early reviews of the business model concept as seen around the dot.com era and the rise of the ebusiness model, while a more recent account of events and developments can be found in Fielt's 2014 review.

Around 2001-2002, the concept of the business model started receiving a much more general meaning in management literature than the e-biz rhetoric which had surrounded it in the first years. Despite the definition of a business model still being “fuzzy at best”, in the words of Porter (2001), his colleague Joan Magretta, for instance, gained much attention by perceiving business models as “stories that explain how enterprises work” (Magretta 2002, 4). According to Magretta, business models did not only show how the firm made money but also answered fundamental questions such as: “who is the customer?” and “what does the customer value?” (Magretta 2002, 4). Precisely this aspect of value seen from the point of the customer made a big impact on the existing thinking.

Further, a basic idea of the business model concept was that it should spell out the unique value proposition of the firm and how such a value proposition ought to be implemented. For customers such “value creation” could be related to solving a problem, improving performance, or reducing risk and costs, which might require specific value configurations including relationships to suppliers, access to technologies, insight in the users' needs etc.

In the late 1990's the ‘business model’ concept became almost synonymous with e-business and the emergence of the so-called new economy. The Internet had in essence created an array of new business models where the major focal point of the literature on business models from an e-business perspective became how to migrate successfully to profitable e-business models. Therefore, much of the business model literature focusing on the e-business context concerned how such organizations could create value in comparison to their bricks and mortar counterparts. The only problem with the early e-business models was that they tended to forget the actual profit-formula or at best be completely overoptimistic on the conversion of Internet traffic to actual profits.

As such, far from all ways of doing business through the Internet were profitable, and accordingly there has been a substantial interest in explaining how the nature of the new distribution and communication channels formed parts of new business structures. One way of approaching this issue was through Amit & Zott's (2001) four dimensions of value-creation potential in e-businesses that has to be in place for an e-business model to be profitable: It must create efficiencies in comparison to existing ways of doing business, and it must facilitate complementarities, novelty or enable the lock-in of customers. For example, the creation of efficiencies can be seen as the underlying notion of Internet-based business models in the banking industry, while e-commerce as a new distribution channel has created efficiencies thus enabling new business models to emerge.

In the late 1990's the mere naming of companies as ‘dot-com’ was enough to signal that the business model of the company was potentially profitable or at least attractive for investors. However, after the tech stock crash, analyst and investor behaviour changed so radically that signaling dot.com had the opposite effect. In a blow, it was no longer viable just to imitate an Internet-company business model. Now profit generation is required

regardless of ones distribution channel. This led to several authors stating that the profit-formula should still be a central feature of the business model. Based on dominant revenue models on the Internet, Afuah and Tucci (2003) identified four profit-formulas for e-businesses:

- Commission
- Advertising
- Mark-up
- Production

It is worth noting that “much of what is being said about the New Economy is not that new at all. Waves of discontinuous change have occurred before”, as Senge & Carstedt (2001, 24) state. Just think of how Henry Ford’s business model revolutionized the car industry almost a century ago, or how Sam Walton revolutionized the retail industry in the 1960’s with his information technology focus and choice of demographic attributes for store locations, thus creating an immense cost structure focus along with a monopolistic market situation. These notions are what Hal Varian denotes as discontinuous innovation.

Although the present focus on business models within academic and practitioner circles to a great extent can be related to their earlier discussions within an e-business context, the importance of the business model perspective is far from only relevant in certain distribution channel structures. The transformation of the inter- and intra-company value chain is ongoing in almost all areas of the economy and this considerably challenges the markets and its enterprises.

TYPES OF BUSINESS MODELS

There are nine business models for a start-up business. They are as follows-

1. Become The Middleman (AKA The “Warby Parker” Model)
2. Become A Marketplace
3. The Subscription Model
4. Customized Everything
5. On-Demand Model
6. The Modernized Direct Sales Model
7. Freemium Model
8. Reverse Auction
9. Virtual Good Model

1. *Become The Middleman (AKA The “Warby Parker” Model)*: Warby Parker had the simple idea back in 2010 we all wish we would have thought of first. They decided to enter the eyewear market, noticing that the market was monopolized by Luxottica, who basically control the price of designer eyewear. With the price bar set high, Warby Parker saw huge opportunity in the market, and realized that because most brands sold the rights to huge companies like Luxottica that drastically increased their manufacturing and design costs. So what was the logical solution to this problem? Become the middleman of course! With the ability to significantly reduce the price of its product, along with the cool factor and social good elements weaved into the company’s brand, they were able to capitalize by providing their consumers with large savings. Now that’s what I call a win-win!

Why It Works: Becoming the middleman gives startups a serious pricing advantage, and saves consumers money. Who doesn’t love that? This model also gives a startup much more control over the quality of the

product or service, and gives them immediate feedback from users to continuously develop a better product. This model also allows for better control over contracts and negotiations with distributors, as well as building stronger relationships with suppliers.

Others Who Have Followed: NYC based startup Casper is using this model to change the way mattresses are bought. Scarosso is using this model in the shoe market. Brideside has successfully grown using this model for bridal party retail, and Audicus is changing the market with this model for hearing aids.

2. *Become A Marketplace:* One of the ever growing business models that continues to prove highly effective is becoming a marketplace. This means you are simply bringing supply and demand together. AirBNB reigns as one of the top success stories to implement this business model well. I'm guessing you thought renting rooms from random people's homes via the internet was pretty creepy when you first heard the idea. We did too, but the AirBNB founders believed in the new "sharing economy". They were convinced that the supply and demand was there, and since have convinced over 20 million+ strangers to provide and rent rooms from one another. Uber has also seen explosive growth using the same mentality to create a marketplace where strangers rent rides from strangers. Providing a service is out, and becoming the marketplace is in the ever growing e-commerce sector.

Why It Works: There are several advantages to using this type of business model. First, one of the greatest benefits is having zero to little overhead, and no inventory. You can get a swanky office space if you want, or you can run the company virtually. When you manufacture a product, you take on a lot more risk and pressure to make sure that inventory is sold. When you are the marketplace, instead of worrying about manufacturing costs, you are simply bringing the sellers to the buyers (and vice versa) and facilitating a transaction, taking a small slice of the pie from each transaction. You give sellers a place to make a profit and reach consumers, while customers are happy to find exactly what they want, usually at a discounted price.

Others Who Have Followed: Amazon is one of the leaders of this business model, creating a marketplace for those who wish to sell items, and those who wish to buy them at a better price. Raise is a C2C gift card market, that a supply of discounted gift cards from sellers who would rather have the cash to spend as they please. Beast is another example of a marketplace that connects high level consultants for the millennial era with clients looking to outsource unmet needs in their business.

3. *The Subscription Model:* Mobile payments continue to rise in popularity, and consumers are trending towards a more simple, hassle-free kind of shopping experience. These trends are leading towards explosive growth in subscription based services that consumers can easily set up, and then not worry about, knowing they will receive their product or service every month. Dollar Shave Club is one of those simple subscription services that made it much easier for men (and now women) to not worry about running out of razors, and save money. Add in some crazy, well messaged commercials with a hilarious spokesperson, and you have a brand who continues to double and even triple revenues annually.

Why It Works: This business model provides an optimal balance of value to both the startup and the customer. It's simple and convenient for customers, and take a lot of thinking out of the purchasing process. Customers know they will receive their product every month around the same time, don't have to worry about reorders, and know they will get a set, flat rate that will stay within a budget. On the startup end, the value lies in being able to predict revenues through recurring sales, which is incredibly advantageous for a company's valuation. This enhances the saleability of the company, increases the attractiveness to potential VCs and buyers, and often leads to valuations up to 8 times that of similar businesses with little recurring revenue.

Others Who Have Followed: We all know Netflix revolutionized the way we consume TV shows and movies with it's very affordable monthly subscription service. Spotify did the same thing for the way we consume music, by providing consumers the means to listen to virtually any song they'd like for a small monthly subscription. SkillShare, an edtech startup, initially started where consumers would buy educational content a la carte, but has pivoted to a monthly subscription model to access their content which has proved to work better for them.

Of course there is also the subscription box trend that has reigned the past few years, like BirchBox, which provides samples of high end beauty products to consumers for a low monthly subscription.

4. *Customized Everything*: The fashion industry is dominating the customization trend that aligns with a consumer shift towards more personalized goods that reflects their specific tastes. This is the reason Coke added names to their bottle packaging, automotive manufacturers make cars in any color you want, and massive retailers like Nike allow you to design your own custom sneakers. Custom-tailoring in the clothing sector has been on the rise, and services like Indochino and Black Lapel have taken the market by solving this problem for men's suits. The services make it simple to choose the sizes, colors, styles, and budget you want, that take out the hassle of going to a tailor, and delivers right to your doorstep. The rise of 3D printers has also created a surge of mass customization startups by providing a technology that previously was much more expensive.

Why It Works: A rising percentage of the population is interested in build-to-order products and is willing to spend 25% more according to a study by Mashable.com for products built specifically to their needs. Production time and lowering costs of customization configurators also bring much more potential to the market, compared to previous years.

5. *On-Demand Model*: As the world speeds up, consumers have adopted a preference for instant gratification. The on-demand economy has a growing appetite for greater convenience, speed, and simplicity. Smartphones have driven transformational shifts in how we consume goods and services, and many consumers have become acclimated to purchasing at the press of a button. On-demand startups like Uber are shaking up their industries, and also provide steady contracted work for consumers who want to become solopreneurs. Startup, Handy, has also seen explosive growth by providing handymen at a moments notice, servicing a need for consumers that was not previously available for situations where a consumer can not wait a few days to fix a problem in their home.

Why It Works: The on-demand market leaders today know that this successful model is much more cost-effective, scalable, and more efficient than it's ever been. The model allows a startup to leverage new technology, while utilizing existing infrastructures. Another benefit lies in the use of freelance labor with its obvious advantages in cost cutting. There has also been an influx of VC belief and capital in this revenue model.

Others Who Have Followed: Spothero is a startup that provides parking on-demand when you are on your way to an event or into the city. Another growing startup in the space is Postmates who provide a local, on-demand delivery of goods. Glamsquad is providing on-demand services for the beauty industry, and Washio provides the same service for the dry cleaning and laundry sector.

6. *The Modernized Direct Sales Model*: Direct sales companies like Avon and Amway understand there is a big business opportunity in the model. In 2009, direct selling accounted for \$117B in sales worldwide. Chloe + Isabel, a fashion jewelry startup, is reinventing the direct sales model by appealing to fashion forward students who have tuition to pay and others who are unable to secure full-time employment. The startup designs, produces, and markets fashion jewelry, and interested sellers or merchandisers can sign up and create their own online store to sell their jewelry and earn a 30% commission utilizing the startups technology infrastructure. The startup has seen incredible success using this model, and increased loyalty of its sellers (who are also its customers).

Why It Works: This model is perfect for today's economy where people are more willing than ever to supplement their income, and seek new career paths. With unemployment still high, and more companies offering supplemental income opportunities, this model continues to rise in popularity. Another reason is that social media allows sellers to reach more people than ever, increasing their success as merchandisers, and bringing in higher revenues for the company. Finally, software available now has dramatically improved productivity and flow for direct sales reps.

Others Who Have Followed: Sequoia-funded newcomer, and another jewelry and accessories startup Stella

& Dot has found massive success in using this type of business model. Trumaker, is also finding success with this model in the mobile men's apparel space and call their direct sellers "Outfitters".

7. Freemium Model: This combination of "free" and "premium" has become a widely used approach amongst startups over the last decade. Broken down, the model offers a basic service to consumers for free, while charging for premium services (advanced features and perks) to paying members. LinkedIn is one of the best examples of a successful freemium model, with the free version letting users share professional profiles, while the premium offerings are talent solutions and premium subscriptions with added features. One of the most interesting reasons LinkedIn's model works is because each new member that signs up for free or premium increases the value for other members. Make sure if you choose this model that you find a balance between what you give away so that users will still need or want to upgrade to a paid plan.

Why It Works: One of the greatest advantages to a freemium strategy lies in its ability to be a marketing tool for your service, which helps early stage startups scale by attracting a user base without costly ad campaigns. Freemium models also tend to be more successful than 30-day free trials and other offers like that. Customers are much more comfortable with accessing a service for free, and the no strings attached feeling that comes with before deciding to make a purchase.

Others Who Have Followed: Dropbox, Hulu, and Match.com are all very popular services that have adopted a successful freemium model. Dating app Tinder has also adopted a freemium model, offering exclusive features to users who pay a low monthly fee. Survey service PollDaddy, video sharing service Vimeo, and photo sharing service Flickr are all members of the freemium model group as well.

8. Reverse Auction: This type of model is the reverse of Ebay where the buyers switch roles with the sellers. Buyers who care about price offer bids for a service to the seller,s and if the seller accepts the bid, the buyer must agree to all of the seller's terms and conditions. Sellers benefit from access to a marketplace, while the buyers feel like they are getting a great bargain. One of the most successful implementations of this model is Priceline, where travelers give up convenience for low prices on airline tickets, rentals, and other travel accommodations. Priceline provides a win-win marketplace for it's B2C marketplace, and because of that has seen significant revenue growth.

Why It Works: Price sensitive buyers feel great, because they feel good about the deal they won, while the company also wins by facilitating the deal with its sellers who get access to a marketplace and are still making a profit on inventory that might not have sold otherwise.

Others Who Have Followed: FedBid allows government agencies to use the reverse auction model to award contracts to businesses. Stayful uses the model to help boutique hotels fill unsold inventory which would otherwise go to waste. Squeezify uses this model for freelance work, and MyHammer has found success with the business model helping consumers receive quotes from service experts.

9. Virtual Good Model: We all know the game Candy Crush and its addictive qualities that have wasted more hours than most of us are willing to share. Candy Crush understands the power of the virtual good model, and made a ton of its revenues for digital products like extra lives or features like a "color bomb". Virtual goods are online only products users pay for normally in games or apps such as upgrades, points, gifts, or weapons. The app Hot or Not used this model well by allowing its users to send virtual roses to other users costing between \$2 to \$10, and the game Clash of Clans has users that spend thousands of dollars each month on their in-app purchases.

Why It Works: One of the greatest advantages of virtual goods are the high margins, since they cost only what the bandwidth required to serve them does. The objects sold create real value for consumers, for example, in a game, buying a sword adds to the real fun people are having playing a game. Market liquidity continues to increase as more gamers live in virtual worlds. Virtual goods are also more increasingly becoming a way for people to show affection and meaning as we continue moving more into an app obsessed world.

Others Who Have Followed: Facebook added this revenue model to its social aspect by allowing users to give virtual gifts to one another. Other startups like Acclaim Games, Meez, and Weeworld have also implemented virtual goods from the gaming aspect.

FEATURES OF A SUSTAINABLE BUSINESS MODEL

Whatever be the business model, sustainability should be at its core, otherwise a business cannot be successful. In light of this, the ensuing paragraphs discuss about the features of a sustainable business model.

1. *Diversity* : The firm needs a diverse set of resources, people and investments to be resilient. While diverse investments are seen to draw on resources and absorb managerial attention, a single line of business, single sources of revenues, or people with similar mindsets can expose the firm to greater risks. Firms can no longer simply 'stick to the knitting'.
2. *Modularity* : Matrixed organizations are often seen as facilitating knowledge flows. However, such organizations are not only resource intensive, they expose the whole organization to shocks as they reverberate through the organization. Organizations need to be less interdependent, and focus on modularity, so they can be insulated from shocks.
3. *Openness* : Resilient firms must know what's going on outside their boundaries. These firms can sense issues on the horizon. They are constantly monitoring the external environment, and drawing scenarios of possible futures. They expect not only to react to those potential futures, but also help to shape them. The link between the organization and the external business and natural environment is vital, permeable, and acquiescent.
4. *Slack resources* : In an era of just-in-time production, slack resources are often seen as costly and wasteful. However, innovation and adaptation requires both financial and creative investments, and the space to change direction. Firms that can ride storms must allow for a little more time to accommodate new ideas, scenarios, and shifts in thinking.
5. *Matching cycles* : Firms often think about optimizing performance and getting more from less. But, these thinking puts firms on a treadmill, doing the same thing faster every day and, it has them bumping up against resource constraints. Resilient businesses think, not about constant growth, but rather about cyclical processes: cycles of growth and contraction, cycles of production, and cycles of consumer purchase patterns. Understanding the rhythms of business and the environment will allow the firm to synchronize with them meaningfully, and not overreact to what is likely just a cycle. These ideas need to be developed and tested. But, they offer a starting place for dialogue for a 21st century business model based on sustainability.
6. *Identify your specific audience*: Targeting a wide audience won't allow your business to hone in on customers who truly need and want your product or service. Instead, when creating your business model, narrow your audience down to two or three detailed buyer personas. Outline each persona's demographics, common challenges and the solutions your company will offer. As an example, Home Depot might appeal to everyone or carry a product the average person needs, but the company's primary target market is homeowners and builders.
7. *Establish business processes*: Before your business can go live, you need to have an understanding of the activities required to make your business model work. Determine key business activities by first identifying the core aspect of your business's offering. Are you responsible for providing a service, shipping a product or offering consulting? In the case of Ticketbis, an online ticket exchange marketplace, key business processes include marketing and product delivery management.
8. *Develop a strong value proposition*: How will your company stand out among the competition? Do you provide an innovative service, revolutionary product or a new twist on an old favourite? Establishing

exactly what your business offers and why it's better than competitors is the beginning of a strong value proposition. Once you've got a few value propositions defined, link each one to a service or product delivery system to determine how you will remain valuable to customers over time.

9. *Determine key business partners:* No business can function properly (let alone reach established goals) without key partners that contribute to the business's ability to serve customers. When creating a business model, select key partners, like suppliers, strategic alliances or advertising partners. Using the previous example of Home Depot, key business partners may be lumber suppliers, parts wholesalers and logistics companies.
10. *Leave room for innovation:* When launching a company and developing a business model, your business plan is based on many assumptions. After all, until you begin to welcome paying customers, you don't truly know if your business model will meet their ongoing needs. For this reason, it's important to leave room for future innovations. Don't make a critical mistake by thinking your initial plan is a static document. Instead, review it often and implement changes as needed.

SIGNIFICANCE OF A BUSINESS MODELLING

The importance of business modelling can be understood by perusing the eye-catching benefits of business process modelling.

1. *Align Operations with Business Strategy:* Implementing a business strategy or a new business model requires changes in the operations and in how people perform their work. This can be affected only by operationalising the business changes to the actual business processes, business rules and decisions that are made on a day to day basis by all the people in the organization.

Business Process Modelling facilitates this by helping:

- Link organizational strategy to well-defined business processes - Business process modelling is a critical tool for management and executives to ensure that the business processes are consistent with and enable execution towards achieving the overall strategy of the organization.
 - Align business execution and operation activity with strategy - Process modeling ensures that the operational tasks and activities performed by the team members actually help the organization implement its strategy. If the processes and the strategy are not aligned it usually leads to failure in execution because even if the operational tasks are performed correctly, the overall organizational goals are not achieved.
 - Implement Business Process Reengineering (BPR) by understanding the existing processes and changing them for improved performance - Business process analysis helps in identifying bottlenecks and inefficiencies in the processes and thus improving them.
 - Enable Process Agility, an ability to change and communicate processes quickly to take advantage of new business opportunities or address business challenges.
2. *Improve Process Communication:* One area that distinguishes successful businesses and teams is that they have a very clear idea of what they are supposed to do, how they are supposed to do it and what is the exact role of every team member. Clear communication of the operational processes is critical to facilitate a smooth functioning of a team.

Business Process Modelling enables the documenting and communicating of the organizations business processes:

- Process modelling offers a common unified language and methodology for communicating processes and information about processes and decision rules.

- It is ideal for training of new people and rapid knowledge transfer because with a thoroughly documented process any new team member can be very quickly trained on what they have to do in any situation that they may face.
 - Minimizes potential danger of loss of staff resulting in loss of business process knowledge.
 - It helps business managers communicate their ideas quickly and clearly.
 - Jump-starts the organizational process documentation initiative.
 - Turns the team's experience and "tribal knowledge" into documented processes.
3. *Increase Control and Consistency:* Organizations and companies that succeed are ones that ensure their business processes and rules are well designed and that they are consistently applied the same way every single time. This process control and consistency is key for success in organizations ranging from fast-food chains to hospitals to NASA Space Shuttle operations.

Business Process Modelling makes this possible by helping:

- Formalize existing processes which may not be well documented or which have evolved over time into "informal knowledge".
 - Execute process in consistent manner because instead of relying on people to remember to do the right thing the documented process can be given to the business users.
 - Make better decisions because guesswork is eliminated as business users can have the documented business rules in front of them.
 - Handle exceptions faster and in a better way.
 - Complete regulatory compliance by ensuring that the documented processes follow the company guidelines and legal regulations.
 - Put business people in charge.
 - Support compliance initiatives such as Six Sigma, ISO 9000, and Sarbanes-Oxley.
4. *Improve Operational Efficiencies:* In today's business environment, every business and every manager wants to ensure that they are achieving the best possible results with the resources available to them. There is no room for inefficiencies and wastage.

The Process simulation and analysis steps of Business Process Modelling are critical tools for managers and analysts to ensure that their processes are optimized and are running like a well-oiled machine:

- Process Simulation allows analysis and understanding of the process flows and helps managers know if there is room for further optimization and efficiencies.
- It helps spot needed improvements and reduce process cycle time.
- It increases productivity of existing resources and staff and so allows the team to do more with less.
- It facilitates risk free experimentation and encourages exchange of process improvement ideas.
- Process simulation allows modelling of process designs before actually implementing them thus minimizing disruptions.
- It encourages a mind-set of continually optimizing business critical processes to incrementally improve operational efficiencies.
- Process analysis enables better resource utilization.

5. *Gain Competitive Advantage:* All the benefits mentioned above lead to a significant competitive advantage for an organization that has invested the time and effort to document, simulate and improve its business processes. Studies of many wildly successful companies has often shown that their success was not due to better ideas or better business models but because they invested significantly in business process modeling to constantly refine and improve their processes. A slight improvement in one activity here and another one there leads to an overall better process and as that process is executed repeatedly in the day-to-day running of the business it makes an organization much more efficient and better than its competitors.

A business that has aligned its operations to its strategy, is agile, that has control over its processes, is running efficiently and has well trained staff is indeed at the top of its game.

USAGE / APPLICATION OF BUSINESS MODELS

In order to comprehend the application / usage of business models, the various sectors will be covered in the form of case lets.

Caselet 1 : Managing value creation in Construction

Summary of the key aspects of the case companies' business models

Companies	Value creation system	Value proposition or offering	Revenue model
Company 1	Streamlined process with an incentive for further improvements	Additional value through shorter delivery time and quality that is guaranteed	Value-based rather than 'selling and doing hours'
Company 2	Co-creation of value with other stakeholders; building virtually to enhance shared understanding of building and its cost of construction	Predictable, worry-free and competitive investment with better constructability, shorter delivery time and lower cost	Based on added value; services offered in portions to increase transparency and enable customers decide what is valuable to them
Company 3	Competence in design, selling and marketing supported by collaboration with experts, researchers and sub-contractors	Safe, sustainable and technologically advanced products for users and society; life-cycle services for buyers	Multiple revenue-streams generated from products and supplementary services

The first case example illustrates the changes in the business model of a company that offers project and construction management services. In particular, the company aims to implement a new value-based revenue logic for some of its offerings that were previously priced on the basis of hours worked. This is due to the recent improvements in the company's value creation system that streamlined the order-delivery process from erratic to lean. The improvements made no sense with the old revenue logic that supported 'doing hours', because the customer bought and paid for hours. Thus, it was believed that a company could utilise its new capabilities to provide a distinctive offering based on additional value to customers. In particular, value is added by faster delivery, which comes with a guarantee for perfect quality. Now, due to the change in revenue logic, the company has not only a new value proposition but also an incentive to use as few hours as possible for maximum value delivery.

The second case example describes the business model of a construction company. The company aims to provide value to its customers by sharing reliable cost information as early as possible so that customers' business requirements are able to drive the design and realisation phases of projects. In practice, the company has developed unique processes to source and manage customers' requirements and to develop design alternatives together with clients, users and other project participants. Strong emphasis is also placed on building everything virtually at first so that all stakeholders such as designers, owner representatives and users can have the same visual understanding of the building. In addition, the structural information is instantly linked with quantity surveying and cost information to provide better control over costs and to inform customers of the cost consequences of different design alternatives. The company refers to their business model as service construction that aims to offer optimal solutions with better constructability, lower total costs and shorter delivery time so that safe, worry-free and competitive investment can be offered to all clients.

The third case example describes the business model of a company that manufactures playground equipment and park furniture. The company has a vision of bringing people of all ages together by developing inspiring environments to play, learn and exercise outdoors. In addition to users, the company identifies the buyers of its products and society in general as other stakeholders whose needs it must satisfy. In practice, this implies that the company's offering comprises not only physical products but also many supplementary services such as financing and maintenance. The company has developed multiple themes for the playground equipment and offer various features so that their physical offering appeals to different customer segments from children to their grandparents. Indeed, the themes have been developed in collaboration with experts from specific fields (e.g. shipbuilders or professional climbers and deejays). Partnerships with universities and other research partners enhance the company's understanding of social interaction, physical development, interactive learning and new technology that will keep products up-to-date with their users' needs. Thus, it is not merely the core product that is important, but the comprehensiveness of the business model where different elements strongly support each others' existence.

These three illustrative examples demonstrate the applicability of the business model concept for the analysis of the construction business and highlight the systemic nature of value creation. A change in one element of the business model can affect all other elements as well and, thus, may require a company to come up with an entirely new business model as elements need to be aligned relative to each other. The illustrations also show that changes in business models can be triggered by innovations made at different levels, that is, from process improvements to new value propositions and revenue models. Designing business models requires a deep understanding of customers' needs, because business models, as illustrated, should be able to respond to the requirements of specific customers or market segments. Thus, it is important to use appropriate means in managing value creation throughout the organization. Well-defined business model frameworks enable managers to understand how their companies create value for customers as systems, because they provide managers with a common language to discuss and visualize their business models as well as communicate these models to employees and other important stakeholders that need to be aligned with a shared vision.

Caselet 2 : Cooperative Business Models in Steel Enterprises in Poland

Since the 90's, the steel industry in Poland has followed the latest trends in business management. Before privatization, the largest steel mill in Poland, Huta Katowice, had formed several alliances in the form of joint ventures with foreign companies. One of them was the company HK ABB, formed with the Swiss-Swedish group ABB, and the second was Alkat, set up with the French company Air Liquide. A similar situation was observed in other mills, especially in Huta Sendzimir. Other mills, due to much lower potential and capacity, entered into cooperation arrangements on a much smaller scale. Among the broadly defined cooperative business models, the most important were links based on outsourcing. Frequently, the main separated areas of activity were: maintenance, rail and road transport, automation, widely understood services (cleaning, protection of property, water, medical services). From the very beginning it was assumed that the spun-off companies were oriented towards maximum reduction of operating costs. Those companies had also various

protective packages, e.g. priority in receiving orders from the mills. Generally, after the take-over of the Polish steel enterprises by foreign capital at the beginning of the current decade (ArcelorMittal, CMC, Celsa) the new owners applied one of two strategies: merging the spunoff companies with the core business, or leaving the companies outside the structure. Currently, companies providing services which are necessary in the production process are usually included within the structure of consolidated enterprises. For example, American CMC, the owner of Huta Zawiercie, decided to follow this course of action, and since 2005 they have operated as the plant's departments. Spanish Celsa, which is a strategic investor in Huta Ostrowiec, applied a completely different approach. Prior to privatization, the mill had spun-off companies providing different services, including despatches of refractories, industrial gases and transport. Seven companies with different legal status currently work for Celsa Huta Ostrowiec. The most complicated situation was observed in steel mills owned by ArcelorMittal Poland, mostly due to the scope and scale of past outsourcing activities. Initially, the situation remained unchanged as it enabled compliance with the EU requirements regarding the number of employees. A comprehensive strategy for all the subsidiaries was subsequently prepared. The companies (activities) needed to ensure the production process were incorporated into the structure of the ArcelorMittal Poland. For non-core business entities, such as companies dealing with the provision of medical services and tourism, the company is open to potential investors. The fact remains that some auxiliary functions are still outsourced, such as transport and wastes processing. In 2011, a research team from the Academy of Business in Dabrowa Gornicza conducted direct research which included a group of 125 companies operating in five traditional sectors of the Polish economy: steel industry and steel-related sectors such as machinery, coke, mining and energy. The research attempted for the most part to identify the scale and scope of the 10 selected management concepts in Polish companies in these sectors. The concept of outsourcing was one of the most widely used by the companies surveyed (24 indications). Respondents were able to choose the use of outsourcing by: reduction of the company's organizational structure, reducing the number of management levels, employment reduction, business process outsourcing, outsourcing in processing and information management, IT outsourcing, outsourcing of HR functions, payroll, staff leasing. Of these, two concepts were most frequently indicated: "reduction of the company's organizational structure, and "reducing the number of management levels" and "employment reduction" – responses of this type were given by 15 and 18 companies respectively. All other proposals were much less common (less, than 10 indications). The relatively minimal interest in the outsourcing of IT and HR functions is surprising, as they are generally considered amongst the most common. Nine and four companies indicated the utilization of these concepts respectively. In these same studies, one of the concepts analyzed was inter-organizational cooperative strategies (alliances, networks, virtual organizations). However, in contrast to outsourcing, inter-organizational cooperation strategies were among the least popular management concepts utilized by the companies (only nine indications). Respondents were able to choose from the following options: bilateral alliances in the form of: 1) partial purchase of shares in the partner company, mutual exchange of shares (cross-sharing), creation of a separate entity (a joint venture company), loose agreements such as the appointment of a task team to work in R&D; 2) network organization; 3) virtual organization. Respondents mainly favoured the formation of bilateral alliances, among which "loose agreements ..." were strongly dominant. Other forms of bilateral alliances were seemingly utilized only two or three times. It is worth noting that two respondents identified the creation of virtual and network organizations, which means that the respondents mainly use the simplest forms of inter-organizational cooperation. On the other hand, it should be noted that virtual organizations, by nature, are rather the domain of other sectors of the economy.

Caselet 3: The Automotive Industry Business Model

In this caselet, the automotive industry will be studied under five points- a) Fundamentals of the existing automotive industry business model; b) Pressures for change in the existing business model; c) Incremental business model evolution in the automotive industry; d) Radical business model innovation in the automotive industry and e) Failed innovative business models in the automotive industry.

a) *Fundamentals of the existing automotive industry business model*

At a generic level, the mainstream or high-volume automotive industry has a clearly defined and established business model. Value capture is centred on a product / service package consisting of all-steel vehicle bodies using petrol or diesel engines (with or without hybrid electric drive assistance) which are sold to end-users alongside warranty and service provision. Markets are segmented by various classes and types of car, as discussed in Chapter 2, in a bid to reach different customer types and thereby extract maximum value. Value creation is achieved by the orchestration of in-house capabilities such as the manufacture of vehicle bodies and vehicle assembly, along with procurement regimes that co-ordinate and manage global supply chains and local clusters. Centralised manufacturing operations seeking maximum production economies of scale also necessitate the use of spatially extensive networks of franchised dealers for the sale and support of vehicles, as is outlined in Chapter 9. The value context is perhaps the area where the most change has been evident in recent years, with in particular the emergence of large-scale support for electric vehicles by national and local governments in a complex global tapestry of incentives, regulations and other measures. However, as the post-2008 crisis has exposed, governments are also extremely reluctant to forsake the existing automotive industry that is seen as a major contributor to wealth creation, taxation, employment, balance of trade benefits, technological advance and of course personal mobility.

The generic automotive industry business model is founded upon three key innovations arising in the 19th century: the Ford moving assembly line and related concepts (such as standardised parts; short cycle times); the Budd all-steel vehicle and related concepts (such as painted vehicle bodies); and the Sloan concepts of creating a range of brands and models and related concepts (such as credit for car purchases; used-car trade-ins; annual model cycles) (Clarke, 1996; Marchand, 1991; Nieuwenhuis and Wells, 2007; Raff, 1991). Over time, there has been a process of convergence and consolidation of this business model, as well of change and refinement. A difficult issue is to determine at what point such changes and refinements amount to an evolution of the business model. The Ford and Budd innovations were the key to defining the value creation aspect of the automotive industry business model, while the Sloan innovations were largely concerned with aspects of value capture. Of course, the two are intimately related. For example, Sloan pioneered the use of paint and colour, along with other styling changes, as a means of stimulating demand for new cars. This practice was only practicable with the adoption of all-steel body technology.

Notable among the changes to the business model has been the gradual process, albeit uneven, of vertical disintegration away from the original highly-integrated Ford approach (Langlois and Robertson, 1989). As a consequence, suppliers have a greater share of the ex-works value of the average car than previously and, with time, have taken a greater role in R&D for new technology development. Supplier management has become a central concern for vehicle manufacturers, while global supply chains have become a distinctive feature of the operating environment with suppliers perhaps more able to seek out low-cost manufacturing locations (Cohen and Mallik, 1997).

In terms of consolidation and refinement there has been a gradual erosion of non-conformist business models (and many businesses) as the Ford-Budd-Sloan model became increasingly prevalent, first in the United States but then in other countries also. It used to be possible to separate the vehicle manufacturers into three main groups: the niche specialists producing low-volume high-performance and luxury cars (Ferrari; Rolls Royce; Bentley; Aston Martin); the middle volume premium producers (BMW; Saab; Audi; Alfa Romeo); and the high-volume mass producers (Ford; Toyota; Nissan; VW; Fiat). These distinctions have increasingly been eroded. Niche producers have often either disappeared or been absorbed into larger groups. The premium producers have sought to retain their 'cost recovery' approach but are increasingly exploring market segments previously thought inappropriate and pushing volumes to ever-higher levels. The mass producers have sought to introduce models into 'premium'

segments, bought up some niche specialists, and /or introduced their own new premium brands. In this framework, important developments such as the Toyota Production System and 'lean' management practices generally are seen as refinements of the established business model, enhancing efficiency and productivity but not actually challenging the fundamentals of value creation, value capture and value context. That is to say, in a mature industry with a long-established business model there is a tendency to organisational symmetry, but the issues of competitive success and profitability arise out of better execution (doing better) rather than doing something very different. Another important refinement, and one that could perhaps underpin a more profound shift in the business model, is that of greatly enhanced manufacturing flexibility arising primarily out of automation and digitisation, from R&D through to production and finished vehicle logistics. Chapter 4 outlines some of the key changes in manufacturing in the automotive industry. The resultant flexibility has enabled greater productivity of labour and capital, product diversity, contracted product life-cycles, and simultaneously greater 'platform' economies of scale. Through such refinements the automotive business model has been able to achieve significant increases in product quality and performance, at no net increase in real cost.

b) Pressures for change on the existing business model

Despite the enduring success of the prevailing business model, there are also pressures for change arising out of both developments in the value context, and from the accumulation of tensions within the structures of value creation and value capture.

The pressures within the existing business model derive from the tension between the value creation system and the value capture system; a tension that can also be understood as a contradiction between the demands of the production system and the demands of the market. Notwithstanding the greater production flexibility noted above, the manufacturing system remains one in which economies of scale are of primary importance and this, in turn, means that lower per unit costs are achieved by standardised output. Hence the value creation system is one that is orientated towards production ahead of demand, where minimum levels of capacity utilisation are needed to achieve break-even volumes. Where markets are expanding rapidly this value creation system helps power further expansion by lowering costs, creating a virtuous circle of volume growth and price reductions (or profit increases). The value capture system is aligned with the character of the market, with the focus on selling vehicles and limited service or warranty packages, alongside consumer credit. However, where markets are not expanding rapidly and where there is substantial competition from highly similar other manufacturers, market fragmentation may start to erode the mutually supportive structures of value creation and capture. Chapter 2 outlined how at a global level both characteristics are evident: rapid market expansion in some locations but stagnation and even decline in those countries with the longest experience of automobility. The problems are manifested in features such as over-capacity, rampant discounting and other consumer incentives such as interest-free credit, high rates of depreciation on new cars, and a perpetual need to 'massage' cars into the market with tactics such as facelifts, special editions, and other measures. Over-capacity in particular lies at the heart of the stress on the existing business model, and is caused by three features. First, capacity expansion tends to be rather 'lumpy' in that manufacturing economies of scale at a plant level necessitate outputs of say 250,000 units per annum or more. As a result, incremental expansion (and contraction) of output in line with demand is difficult. Second, the constant search for productivity improvements and production efficiencies by every manufacturer tends to result in an increase in available output. Third, there are significant barriers to exit from the industry; and the larger the company the more significant those barriers are. Even when a company does fail, it is often the case that the manufacturing assets are transferred to another company rather than removed entirely from the market. The closure of individual plants is a protracted and contentious process, all the more so because their very scale means that the unemployment consequences on localities can be devastating.

A second major source of stress on the business model occurs when there is misalignment with the value context. The very success of the business model in the case of the automotive industry has resulted in the external costs of automobility becoming ever-more apparent with concerns over local issues such as air quality, noise and congestion alongside the pervasive issues of resource consumption, carbon emissions and deaths and injuries from vehicle use. The impacts of automobility were outlined in Chapter 10. Arising from concerns over negative externalities, the governance frameworks that define much of the value context have also changed, albeit in partial and often contradictory ways (Calef and Goble, 2007). As was detailed in Chapter 9, the car as a product has become increasingly regulated and controlled with many implications for the industry. Intriguingly, developments outside the traditional domain of the automotive industry may ultimately prove decisive. Urbanisation alongside mobile telecommunications could profoundly change cultures of automobility and the nature of successful business models (Accenture, 2011). Such developments are much more difficult to measure and determine, and hence also more difficult for companies to respond to.

c) *Incremental business model evolution in the automotive industry*

One important pathway for business model change is that of incremental evolution by incumbent companies. While the dot.com era that stimulated much interest in business model innovation was also somewhat biased towards new-entrant and entrepreneurial business models (Dubosson-Torbay et al., 2002), in a mature and established industry such as automotive the major incumbent companies have some highly significant advantages that in effect result in barriers to entry to innovative business models. Moreover, incumbents can change their business models, or even run more than one business model, although perhaps in a more constrained manner than a 'clean sheet' new entrant.

Incumbents may therefore be restrained by prevailing attitudes and beliefs, by existing skills and capabilities, and by a concern not to jeopardise large business entities that employ thousands of people (Bock et al., 2012). Risk aversion is most acute on core vehicle models, and the evident incrementalism of, say, successive generations of the VW Golf or BMW 3-Series are testimony to the powerful urge not to meddle with a successful formula. Alternatively, incumbent companies have enormous resources, technical capability, and market understanding allowing a protracted period of business model experimentation that may be denied smaller new-entrants and entrepreneurs.

Neither are the vehicle manufacturers strangers to using alternative business models where appropriate. For many years the practice of using kit assembly plants to serve low-volume markets with high import barriers has been an accepted industry practice. Equally, for many years vehicle manufacturers would subcontract assembly operations to third parties in the event of a lack of their own capacity or, more usually, a concern not to disrupt production lines with derivative models. The willingness to experiment with incremental business models is thus an established facet of the industry, although there is also an evident willingness to revert to the mainstream model as soon as possible. In this regard, the virtual demise of the contract assembly sector in Europe is a direct consequence of enhanced production line flexibility in vehicle manufacturing which has removed the necessity of outsourcing the assembly of niche models.

There has also been some willingness to experiment with incremental business model evolution around the introduction of electric vehicles of various types. The use of novel powertrain features (whether pure battery electric or some form of hybrid) in itself marks a departure from the traditional value capture package. Taken further, pure battery electric vehicles embody various constraints that have rendered them relatively unattractive to the majority of consumers, but those constraints can be mitigated to a degree by adjusting the business model. Hence manufacturers such as Peugeot have experimented with offering short-term access to a range of other vehicles when a consumer buys an electric model, thereby mitigating the concern that electric vehicles cannot be used for occasional long trips due to recharging problems. Conversely, Renault has sought to

offer the Fluence EV separate from the battery pack (which is leased) in an attempt to remove an element of risk from the consumer. It is also interesting to note that Renault with the Twizy has sought to escape the confines of traditional car / motorbike distinctions and design a vehicle with the battery capability in the forefront of their minds. In total, it might be surmised that there has been a gradual evolution in the mainstream business model towards a product-service system approach, and away from merely 'shifting the metal'.

d) *Radical business model innovation in the automotive industry*

There are many examples of radical business model innovation for the automotive industry, but perilously few successful ones. This alone suggests that the mutually reinforcing elements of the mainstream model remain substantially intact and surprisingly durable, despite widespread expectations that this is an industry that really has to change quite radically in order to be sustainable in the future (Maxton and Wormold, 2005; Nieuwenhuis and Wells, 1997; Kley et al., 2011; Wells and Orsato, 2005; Wells, 2001). Those attempts that have survived thus far tend to be marginal and small-scale, and hence insufficient to constitute a meaningful threat to the established model.

Arguably the most dramatic reinvention of the automotive industry business model was that attempted by Daimler (Mercedes) with the Smart. Almost everything associated with this vehicle was new. It was a new brand, with a novel vehicle concept (2-seat urban car with high fuel economy using a tiny 660cc three-cylinder engine and automatic gearbox), made in a new factory with an unusual cruciform layout, assembled by suppliers working with large modules and sub-assemblies, and sold through a novel 'boutique' system of dedicated retail outlets. While not an unmitigated failure, it is reasonable to assert that Smart did not quite achieve what was hoped for by the management. Much of the 'package' offered by Smart pre-figured that now found in the nascent electric vehicle market – for example offering other vehicles on a short-term basis to Smart owners that had a temporary need for a more traditional form of automobility. It is interesting to note that Smart is also a feature of the more recent attempts by Daimler to access the 'mobility services' market in urban areas with their Car2Go concept, with electric versions expected to follow this route (Firnborn and Müller, 2011). In some regards Smart may have been ahead of its time; but also the multiplicity of novel features of the business model also increased the risks associated with the brand. As an illustration, Daimler had to compensate the suppliers who had invested in the Hambach plant established to assemble Smart cars because the production volumes did not match the initial forecasts. Only by virtue of association with the resources of the Daimler Group was Smart able to continue; as a stand-alone business it would have failed long ago.

It is perhaps emblematic that one of the most profound redesigns of the automotive industry business model came from an 'outsider' to the industry, and ultimately failed despite much critical acclaim and media interest alongside substantial government support. Better Place sought to commercialise a 'battery swap' business model for electric vehicles, setting up swapping stations to enable vehicle owners to exchange battery packs as quickly as a traditional petrol or diesel 'fill up' (Christensen et al., 2012). Conceptually, the approach had considerable merit offering to assuage range anxiety problems with rapid 'refuelling', alongside the ability to recharge battery packs in off-peak periods as a bulk buyer of electricity in a manner that would optimise grid electricity usage and allow lowest possible costs. Allied to renewable energy sources in countries such as Denmark, Better Place also sought to maximise the carbon reduction potential of electric vehicles, which is heavily dependent upon the source of power used to generate the electricity (Granovskii et al., 2006; Hawkin et al., 2013). The business model failed because not enough manufacturers were prepared to design vehicles to suit the battery swap system (only Renault had made a significant commitment), the vehicles were too expensive, and because the start-up costs to establish the infrastructure were extremely large. Table 14.1 illustrates briefly some failed business models in the automotive industry.

e) *Failed innovative business models in the automotive industry*

Example	Value creation	Value capture	Value context
MDI Air Car	Franchised factory / retail concept	Zero emissions compressed air engine. Urban vehicle.	No specific support for this technology concept
Rydek	Design concept only	Separate body EV with batteries; split public / private ownership.	Pre-dated support for EVs.
Think	Modular assembly in micro-factories. Internet sales plus mobile service support. Later outsourced assembly.	2 seat urban EV	Multiple trials and experiments e.g. Think@bout London
Better Place	Infrastructure of recharging stations and swap stations; tie in with Renault for initial supply of 100,000 cars. Retain ownership of battery.	4-seat Renault Fluence EV. Separate ownership of battery.	Sought support in specific locations e.g. Denmark; Israel.

SPREADSHEET TECHNIQUES FOR BUSINESS MODELS

Most business organisations collect and manage data on a MS Windows platform. With integrated spreadsheet packages providing users with business modelling tools that are both easy to use and effective, there is an increasing trend in the current business environment to use a spreadsheet platform to build decision models. The main benefits of developing spreadsheet based business models are their transparency and portability characteristics.

One of the factors that usually gets in the way of a smooth model development process is that most spreadsheet users do not follow a framework for model development. Often, people start at the top left hand corner of the first worksheet and cut, move and copy cells and introduce variables and formulae as they need while developing various aspects of the model.

Whilst these approaches invariably lead to a completed model, the efficiency of the model development task itself and the quality of the model produced does suffer. Although most business related graduates learn how to use a spreadsheet and how to model business problems, few learn any framework that is useful specifically for building spreadsheet based business models.

A study of a sample of organisations that used spreadsheet modelling reported some alarming statistics relating to the poor quality of the models developed. Several other researchers in this area have also documented the very high usage of spreadsheets in business and noted in addition the problems associated with the open and unstructured format of spreadsheets.

As in all aspects of programming, the way one chooses to develop a spreadsheet model is very subjective. Building decision models on spreadsheets using a structured and systematic approach that encapsulates the whole problem produces a model that is not only easy to use but easy to extend, and is usually more efficient in the generation of meaningful output. The framework presented here incorporates a mixture of existing, modified and new techniques and has been found to be extremely effective for quantitative risk analysis models and other business models that contain a large number of variables. This is mainly due to the fact that the approach encourages the modeller to categorise model variables according to their function and use a structured

spreadsheet layout, which not only makes the task of finding key inputs and outputs easier but creates a logical platform for sensitivity and risk analysis.

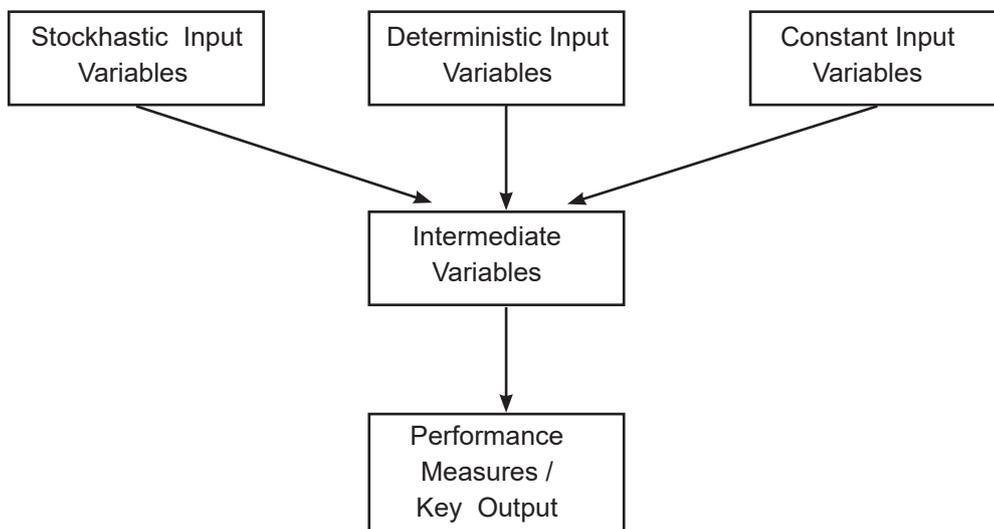
A framework for building spreadsheet based decision models is presented below. The use of the key aspects of the method will then be illustrated with the use of a case study. The process is as follows:

- a) *Identify inputs and outputs*: The first task is to identify whether one or many outputs are required from the model in order to achieve the objective of the task. The inputs mean data and information that are required to produce those outputs.
- b) *Document the logical flow*: Link inputs and outputs using a series of user-defined intermediate or calculation variables. Document the flow of information between all the variables using a graphical representation method such as a bubble diagram or an influence diagram.
- c) *Categorise the variables into the following*: The variables to be categorised under the following categories-
 - i) *Variable inputs* : Quantities that are likely to change during the timeframe of the project. It may be that, within the scope of the project, some quantities that may appear to be variable should be considered as constants. Some of the variable inputs will be decision variables. Separate the variable inputs into: deterministic inputs and stochastic inputs.
 - ii) *Constant inputs* : Quantities that can be considered to be constant for the scope of the project.
 - iii) *Intermediate variables* : Variables that have been introduced into the model to link inputs and outputs. The choice of intermediate variables is subjective, but, as long as the processing is accurate, the actual number of these variables is not critical, and it is always better practice to use more rather than less. This is because breaking down the processes into smaller steps makes the programming easier to follow, easier to debug and overall reduces the need to use complex formulae, thus reducing possible sources for errors.
 - iv) *Performance measures / key outputs* : Model outputs central to the objective of the task.

General Rules for Programming the Spreadsheet are :

1. There should only be a single point of entry for the values of all variables. Other cells that require this quantity should copy the cell reference. This ensures that there is a single location for updating values and there is no resulting inconsistency (please refer exhibit 1 below).

Exhibit 1



2. Constant values should not be used in formulae. A formula should contain functions and cell references to where the constant value is stored. Although this may seem rather tedious it is a safer method to use as it makes it easier to debug and modify the model.

3. *Divide the worksheets* : The modeller can make best use of the multiple worksheet (page) formats of spreadsheet workbooks by allocating specific tasks to separate pages. The basic idea is to allocate variables to workbook pages in order to create a shop front backroom system.

- a) *The Manager Page*: The Manager Page serves as an interface to the decision model. The primary source of the decision variables of the model should be on this page. The other types of variable that should appear on the Manager Page are the performance measures=key outputs. The objective of this method is to provide a specially designed area of the worksheet that can be used to view results and carry out sensitivity analysis. This ensures that the user can change the values of decision variables and immediately view the effect of that change on the performance measures or bottom-line, without needing to wade through rows of intermediate calculations. By containing only the key inputs and outputs, the Manager Page contains only, and all of, the information that needs to be displayed. The Manager Page can also be used for buttons that activate macros that either carry out some processing or display worksheet objects such as graphs and dialog boxes.
- b) *The Constants Page*: This page is used for constant inputs. This is the only point of entry for constant inputs. In a risk analysis model, empirical probability distributions and (constant) parameters for theoretical distributions will also be stored in this page.
- c) *The Calculation Page*: The Calculation Page contains all the intermediate variables, usually in the form of formulae. Input variables used in the calculations are copied from either the Manager Page or the Constants Page. In a risk model, stochastic inputs will also be placed in the Calculation Page. If the values are sampled from theoretical distributions, the parameters will be copied from the Constants Page. Alternatively, if empirical distributions are used to generate the variables, the formulae will sample directly from the (cumulative distribution) tables in the Constants Page. The Manager Page extracts or copies output values generated in this page to display the key outputs. In a very large model, it may be useful to use several calculation pages and allocate sub models to each. The Calculation Page(s) should be documented using a rules table⁵ or a similar object.
- d) *The Graphs Page (optional)*: In business models it is often useful to have dynamic graphs, with the chart input range responding to any changes in the worksheet simultaneously. A series of pointers in the form of button driven macros can be used to display specific graphs on request. These buttons should be placed on the Manager Page.

4. *Test and audit the model* : Debugging spreadsheets can be rather monotonous and laborious. Testing and auditing the model regularly at various stages of its development is usually the only way to avoid having a long-winded debugging session at the end. The following types of tests provide a reasonable foundation for identifying possible programming errors.

- a) *Zero tests*: Set single or groups of inputs to zero and ensure the output values are as should be.
- b) *Logic tests*: With each input variable, increase and then decrease the values to ensure the changes to the outputs are in the logical direction as well as of appropriate magnitudes.
- c) *Manual tests*: Substitute a series of small, easy to manipulate, values for the inputs and compare a manual calculation of the outputs to those generated by the spreadsheet.

The auditing function provided on spreadsheets is a useful tool to identify precedents and dependents of formulae in order to trace the source of an error.

Caselet-1: Inventory Model

A firm that sells a particular product needs to make a decision about the optimal reorder quantity, Q , and reorder point, r , over a period of 10 weeks. The weekly demand for the product as well as the lead time to delivery, once an order is placed, are uncertain. Historical data has been used to construct frequency distributions for each of the variables.

Defining and classifying inputs and outputs:

Constant inputs

- Unit purchase cost
- Unit storage cost
- Ordering cost (fixed)
- Unit shortage cost (unmet demand)
- Empirical distributions of the weekly demand
- Empirical distributions of the lead time

All these inputs will be stored in the Constants Page.

Variable inputs

- Weekly demand (stochastic)
- Lead time (stochastic)
- Maximum order size (decision variable)
- Re-order point (decision variable)

The two decision variables will be stored in the Manager Page. The stochastic inputs will be placed in the Calculation Page.

Outputs

- Total cost over 10 weeks
- Average weekly costs (storage, shortage, order and total)
- Total shortage cost
- Total holding cost

All these outputs will be copied back to the Manager Page.

Documenting the flow of logic / information

This documentation is done using a representation similar to an influence diagram. Four different shapes of 'bubbles' are used in order to differentiate between constants, variable inputs, intermediate variables and key outputs. A 'D' is used to identify a decision input, a tilde or '~' to identify stochastic inputs and an asterisk '*' to indicate a link to a previous or future time period. The shapes are shown in exhibit 2.

Exhibit 2

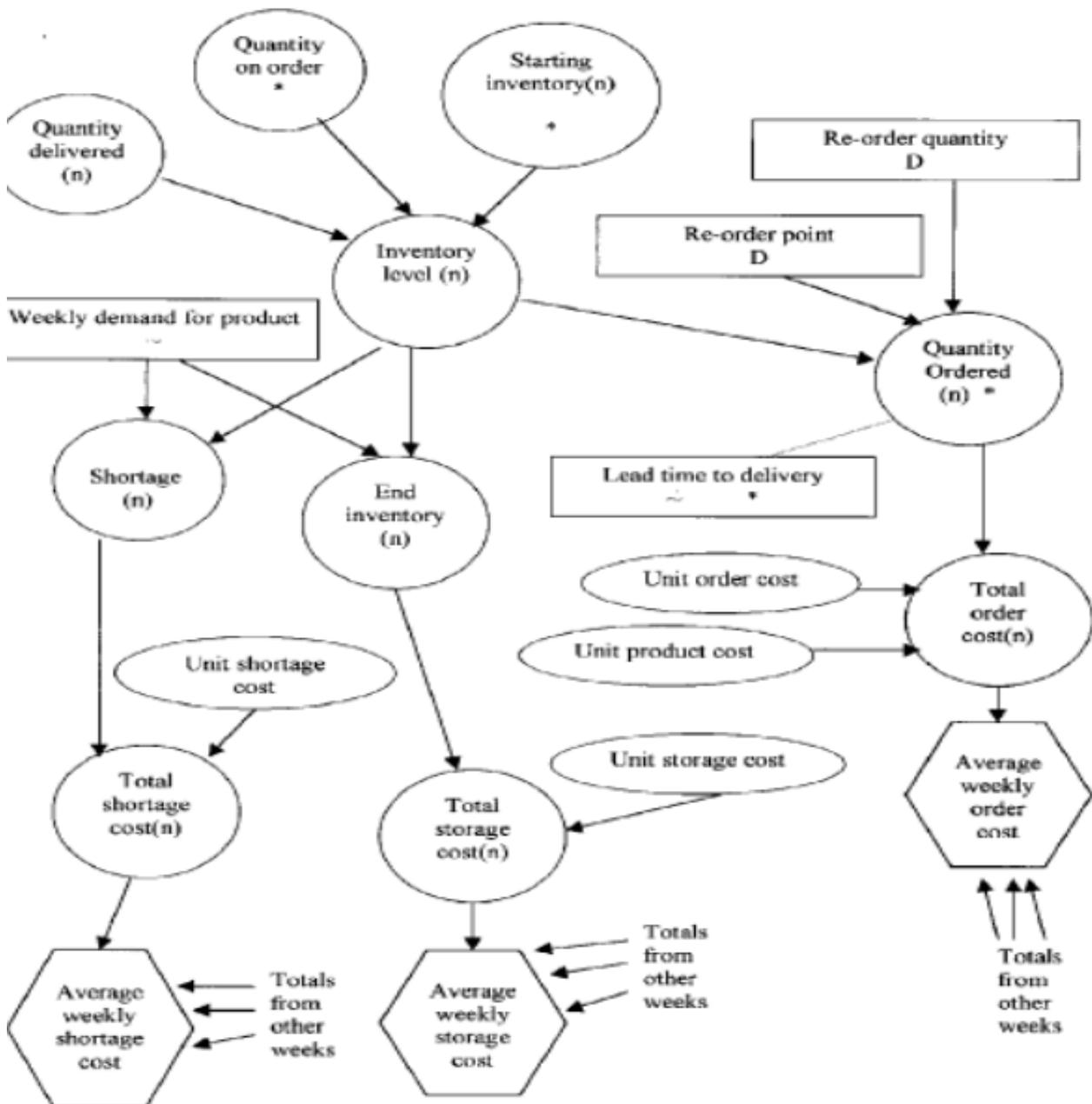
Shapes used for classes of variables



These conventions are used in the influence diagram of exhibit 3. This diagram depicts the logic flow for the example in a typical week n of the weeks covered by the model. The intermediate variables that calculate the total weekly costs for week n , are then used as inputs to calculate the average weekly costs.

Exhibit 3

Documentation of the flow of information for the n^{th} week



Note the following assumptions:

- (a) The deliveries are received and accounted for at the start of a week.
- (b) The orders are placed at the start of a week, based on the inventory after deliveries are received, including outstanding orders. An order is placed if this inventory level is below the order point.
- (c) The lead time to delivery is not influenced by the order quantity.

The model documentation looks at a typical week in the ten week period. The spreadsheet calculations will consist of ten columns corresponding to the ten weeks. The link(s) between the columns are identified in the diagram with an asterisk. If the model had links that went beyond one time period, or links between different sub-models, these could be flagged using appropriate user defined symbols. Once again, the shapes and

symbols used are entirely subjective; the only requirements are clarity and consistency.

The spreadsheet layout

The variables are distributed between the Manager, Calculation and Constants Pages as described earlier. This is quite easily done using the flow diagram as all variable types are clearly identified. The extracts below show these pages with some arbitrary values assigned to the inputs. In the Manager Page, the values of the deterministic inputs (re-order quantity, re-order point) are changed manually by the user. The stochastic inputs (weekly demand, lead time) are generated by the spreadsheet using built-in statistical functions.

The deterministic variables and, parameters and probability distribution functions of the stochastic variables, are listed in the Constants Page (see exhibit 4). All these values are copied onto the Calculation Page using their cell references.

Exhibit 4
The Constant Page

	B	C	D	E	F	G	H	I	J
2		DETERMINISTIC				STOCHASTIC			
3									
4		Ordering Cost (fixed)	\$300.00		WEEKLY DEMAND		LEAD TIME (Weeks)		
5					Mean	Std. Dev.		CPDF	Time
6		Unit Product Cost	\$ 5.00		73	8		0	1
7								0.3	2
8		Unit Storage Cost	\$ 8.00					0.8	3
9								0.95	4
10		Unit Shortage Cost	\$ 12.00						
11									
12									

The formulae contained in the Calculation Page (see exhibit 5) take values from both the Manager and the Constants Page. Examples of such formulae are

cell F8 'IF(F6+F5<Manager!\$D\$5, manager!\$D\$4, 0)

and

cell C20 'IF(C15=0,0,Constants!D\$8*C15)

The outputs displayed in the Manager Page extract information from the Calculation Page. For example, the average shortage cost is calculated using row 18 of the Calculation Page as 'AVERAGE(Calculations!C18:L18)'. To make best use of a model with stochastic variables, it is necessary to simulate through a number of repetitions and summaries the behaviour of the output measures, as in a typical risk analysis model. The Manager Page in exhibit 5 is shown displaying results from a single simulation.

Exhibit 5

The Manager Page with results from a single simulation

	B	C	D	E
2				
3		DECISION VARIABLES		
4		Re-Order Quantity	250	
5		Re-Order Point	100	
6				
7				
8				
9		OUTPUTS		
10		Average weekly shortage cost	\$ 570.00	
11		Average weekly order cost	\$ 120.00	
12		Average weekly storage cost	\$ 251.20	
13		Average weekly total cost	\$ 941.20	
14		Total cost	\$ 9,412.00	
15				

Some other important concepts pertaining to application of spread sheet in designing of business model are as follows-

a) A welcome sheet or splash screen: Some developers like to display introductory information when their model is opened. This tells them when it was written and the version being used, and sends the user to the first sheet. These screens are known as splash screens. They form a “signature” for the developer and provide the user with an impressive welcome to the model. To create a splash screen:

- From the TOOLS menu select MACRO VISUAL BASIC EDITOR (or press ALT F11).
- From the INSERT menu select USERFORM.
- On the UserForm one can start building the splash screen. Many of the controls in the toolbox are the same. Click the control required in the toolbox and then click the UserForm in the position required. By changing the properties of the control in the properties window like, caption, font, background and special effect a splash screen can be quickly created

How Does it Work?: When the workbook is opened, the Workbook_Open subroutine is executed. This subroutine displays the UserForm. When the UserForm is displayed, it's Activate event occurs - which triggers the UserForm_Activate subroutine. This subroutine uses the OnTime method of the Application object to execute a subroutine (named KillTheForm) at a particular time. In this case, the time is five seconds from the current time (change this interval by modifying the argument for the TimeValue function). The KillTheForm subroutine simply unloads the UserForm.

Exit Screens

A closing screen can also be created by a link to the workbook event of “BeforeClose”. This can be used to show a screen that advises of activity or thanks the user for using the model. The code is as follows:

```
Private Sub Workbook_BeforeClose (Cancel As Boolean)
    UserForm2.Show
End Sub
```

Data Screens

The models that require a large amount of data it can be helpful to use a UserForm that enables efficient data validation and storage of the data. These forms can be set up as the splash screen above and linked to an activation button on the worksheet. To establish this button, open the control toolbox toolbar and select the button. This will be given the name “CommandButton”. In the project window of the Visual Basic editor select the sheet on which the command button appears and enter the following code:

```
Private Sub CommandButton1_Click()
    UserForm1.Show
End Sub
```

When the button is clicked on the worksheet, the form will be revealed. On the worksheet the button will only work once you have exited “Design Mode” (indicated by the set square symbol on the control toolbox toolbar).

REVIEW OF KEY EXCEL FUNCTIONS

The five significant points to be remembered for building Macros through MS-Excel.

1. Macro names: Keep macro names short (but descriptive), especially if you record a lot of macros, so you can easily identify them in the Macro Dialog Box. The system also provides a field for Description, though not everyone uses it.

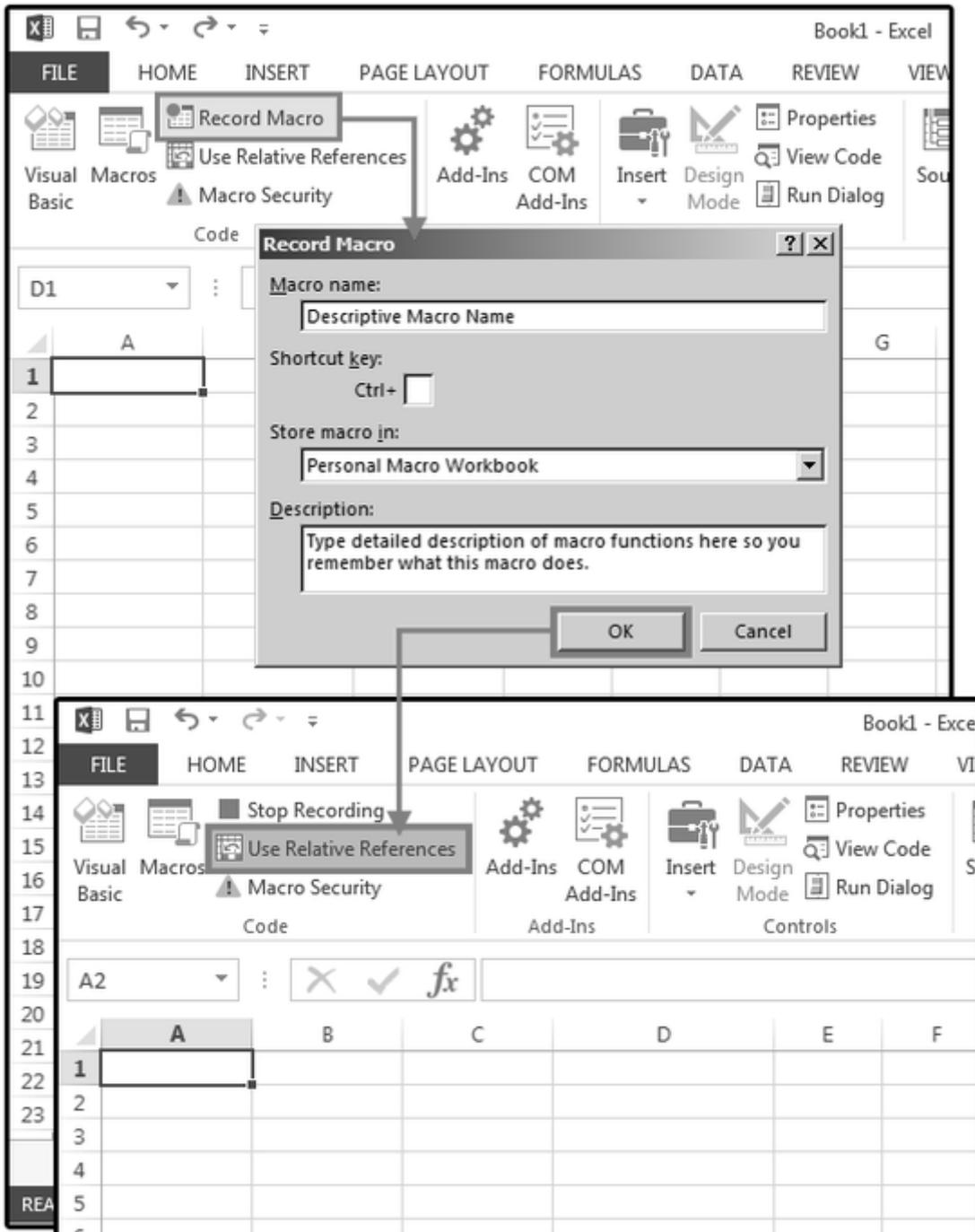
Macro names must begin with a letter and cannot contain spaces, symbols, or punctuation marks. After the first letter, you can use more letters, numbers, or the underscore character, but the maximum length is 80 characters.

2. Use relative (not absolute) cell addresses: Absolute means that the exact cell locations are recorded into the macro—hardcoded cell addresses such as A6 or B12, which limits the macro’s ability to function if anything changes, new data is added/removed, or the list gets longer. Relative means the macro’s recorded keystrokes are relative to the starting cell’s location.

The default in Excel is Absolute, but you can change this to Relative on the Stop Recording toolbar:

Click *Developer>Record Macro*.

- i) In the Record Macro dialog box, enter a macro name and Shortcut Key (if applicable). Choose Personal Macro Workbook in the Store Macro In box, enter a description (if desired), and click OK.
- ii) The dialog box disappears, and the Record Macro button changes to a Stop Recording button. Click the Relative Reference button next—it turns dark green to indicate that it’s active.
- iii) Enter your keystrokes, formulas, and so forth, then click the Stop Recording button and run your macro.



Record macros using Relative Cell addresses.

3. Always begin at Home: For Absolute reference macros, always begin in the Home position (cell A1)—with your cursor and your data. If you saved your macro in the Personal Macro Workbook (recommended), you can reuse this macro on other worksheets with similar data. Regardless of where your cursor is positioned when you begin recording the macro, even if it's already located in cell A1, your first macro keystroke must be Ctrl+Home.

Example: Imagine that every month you receive dozens of spreadsheets from all your branch offices that you must first combine, then organize, and calculate to produce one monthly report. You can write a macro to perform all of these functions, including opening and combining all the worksheets into one combined spreadsheet. For

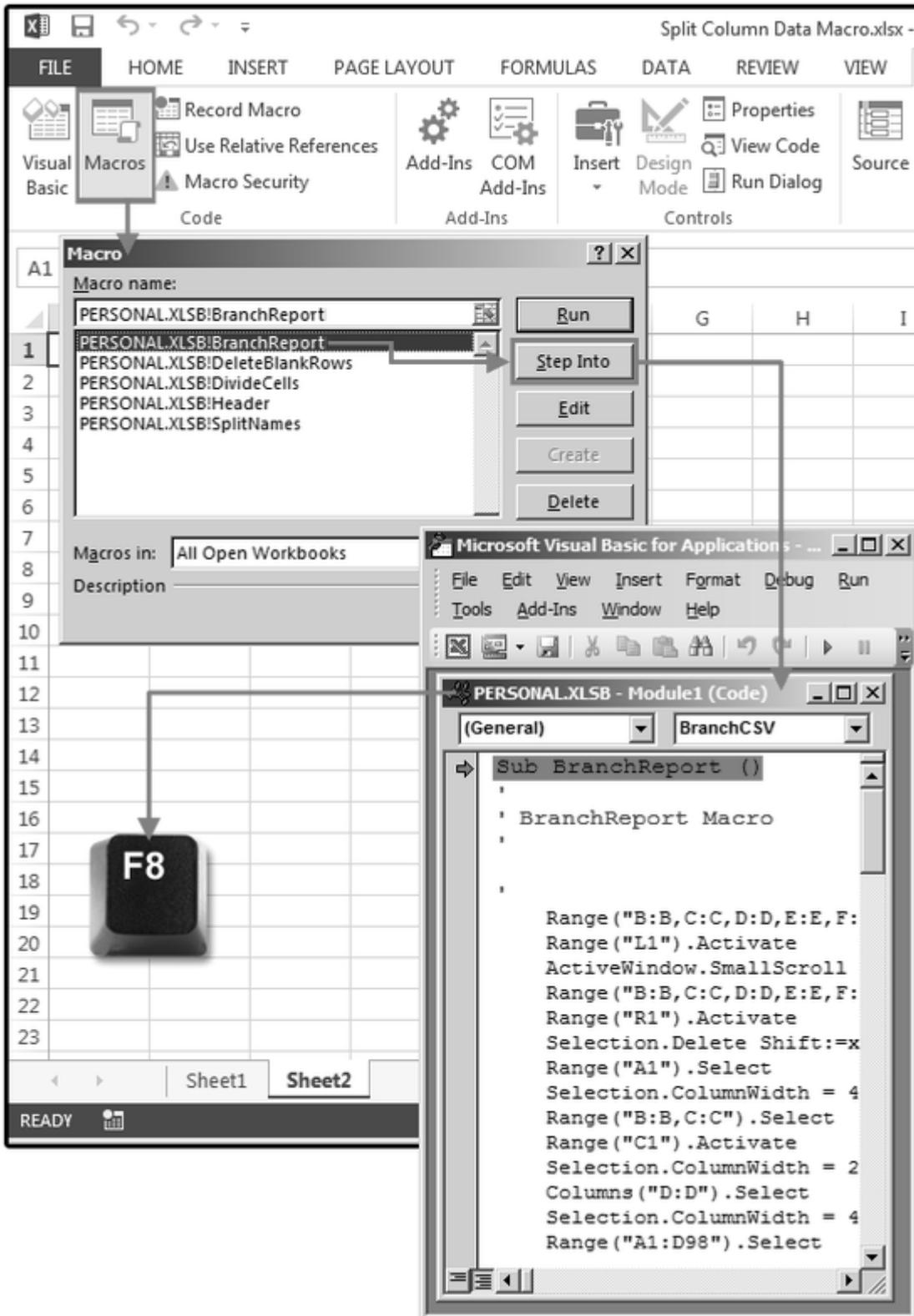
this exercise, I'll just address the final spreadsheet with the combined data.

- i) Create a new workbook in Excel (e.g., April Report). Your cursor is automatically located in the Home position (A1). Do not move it to accommodate titles, field headers, or anything else. It must be positioned in A1.
- ii) Open the first branch workbook and copy the entire spreadsheet's data (minus the column headers) to cell A1 in your April Report spreadsheet. The data begins in A1 and ends in G55.
- iii) Open the second branch workbook and copy the entire spreadsheet's data (minus the column headers) to cell A56 in your April Report spreadsheet. Continue this process until the data in all workbooks are copied into your April Report spreadsheet.
- iv) If the other spreadsheets' data contains formulas, choose Paste>Special>Values for your Paste options. Do not copy the formulas or the formats.
- v) Don't worry about a worksheet title, column headers, or formatting (such as column widths, fonts, etc.) at this point. Just copy the data and run the macro.
- vi) After the data is calculated, you can Insert Rows to add column headers, spreadsheet titles, and other information. Then you can format the column widths, change fonts, add attributes, and place borders or boxes if you'd like. (You can also create an additional macro to perform formatting tasks.)

4. Always navigate with directional keys: Use the directional keys (End-Down, Ctrl+Up, etc.) to position your cursor so you can add, change, or delete the data inside the spreadsheet as needed.

Using the mouse to navigate is more complicated and not as reliable. When it comes to macros, use the mouse only for selecting or clicking menu options.

5. Keep macros small and specific: Keep your macros small and specific to the tasks at hand. The bigger the macro, the slower it runs, especially if it's required to perform many functions or calculate a lot of formulas in a large spreadsheet. Also, if you combine all the tasks into one long macro and it fails, it takes forever to locate the point of failure. If you run each macro separately, you can quickly review the results and verify accuracy.



Excel macros save you time and headaches by automating common, repetitive tasks. And you don't have to be a programmer or know Visual Basic Applications (VBA) to write one. With Excel 2013, it's as simple as recording your keystrokes. Use these tips to make macro recording a cinch.

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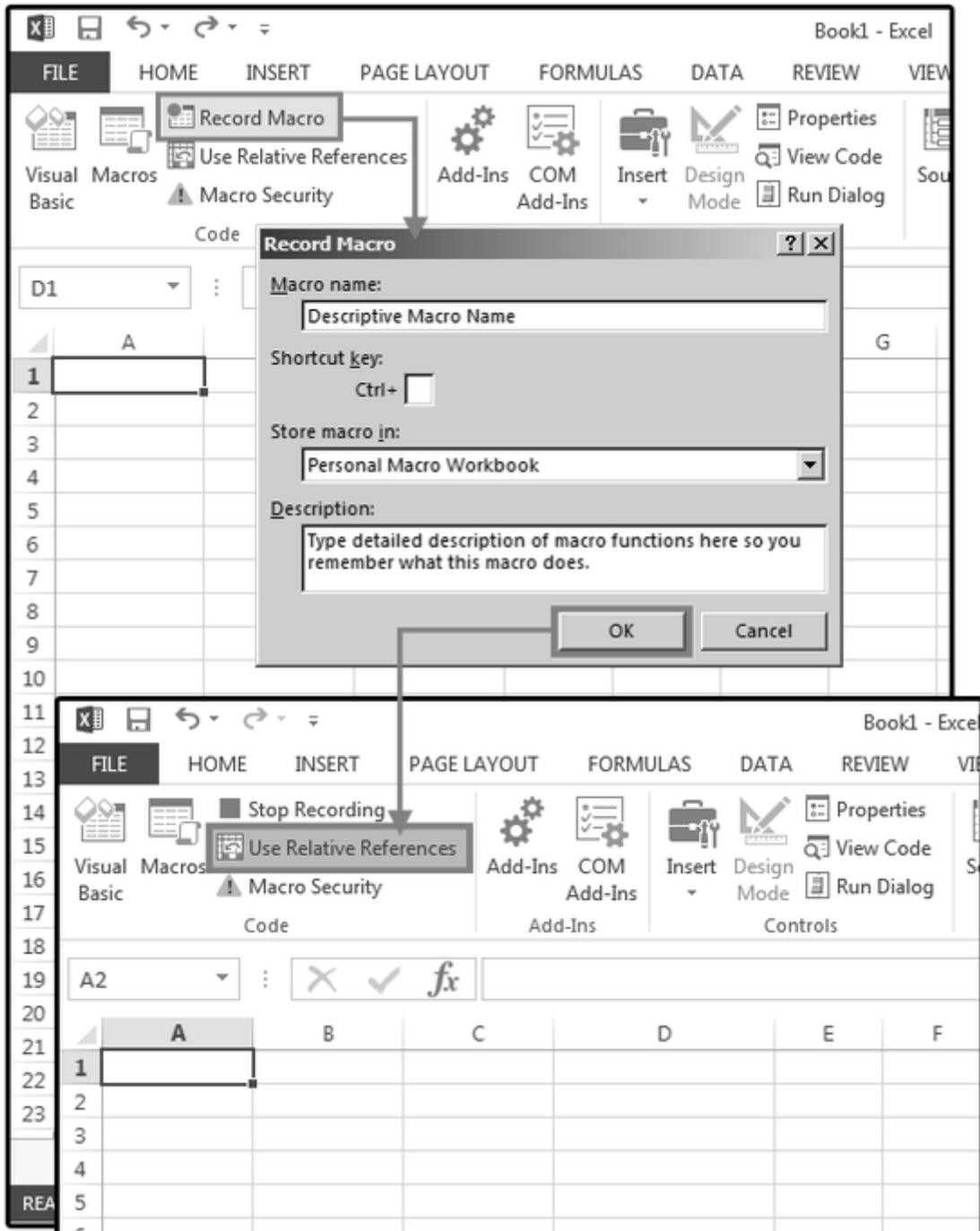
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3. Always begin at Home

For Absolute reference macros, always begin in the Home position (cell A1)—with your cursor and your data. If you saved your macro in the Personal Macro Workbook (recommended), you can reuse this macro on other worksheets with similar data. Regardless of where your cursor is positioned when you begin recording the macro, even if it's already located in cell A1, your first macro keystroke must be Ctrl+Home.

Example: Imagine that every month you receive dozens of spreadsheets from all your branch offices that you must first combine, then organize, and calculate to produce one monthly report. You can write a macro to perform all of these functions, including opening and combining all the worksheets into one combined spreadsheet. For this exercise, I'll just address the final spreadsheet with the combined data.

1. Create a new workbook in Excel (e.g., April Report). Your cursor is automatically located in the Home position (A1). Do not move it to accommodate titles, field headers, or anything else. It must be positioned in A1.
2. Open the first branch workbook and copy the entire spreadsheet's data (minus the column headers) to cell A1 in your April Report spreadsheet. The data begins in A1 and ends in G55.
3. Open the second branch workbook and copy the entire spreadsheet's data (minus the column headers) to cell A56 in your April Report spreadsheet. Continue this process until the data in all workbooks are copied into your April Report spreadsheet.
4. If the other spreadsheets' data contains formulas, choose *Paste>Special>Values* for your Paste options. Do not copy the formulas or the formats.
5. Don't worry about a worksheet title, column headers, or formatting (such as column widths, fonts, etc.) at this point. Just copy the data and run the macro.
6. After the data is calculated, you can Insert Rows to add column headers, spreadsheet titles, and other information. Then you can format the column widths, change fonts, add attributes, and place borders or boxes if you'd like. (You can also create an additional macro to perform formatting tasks.)

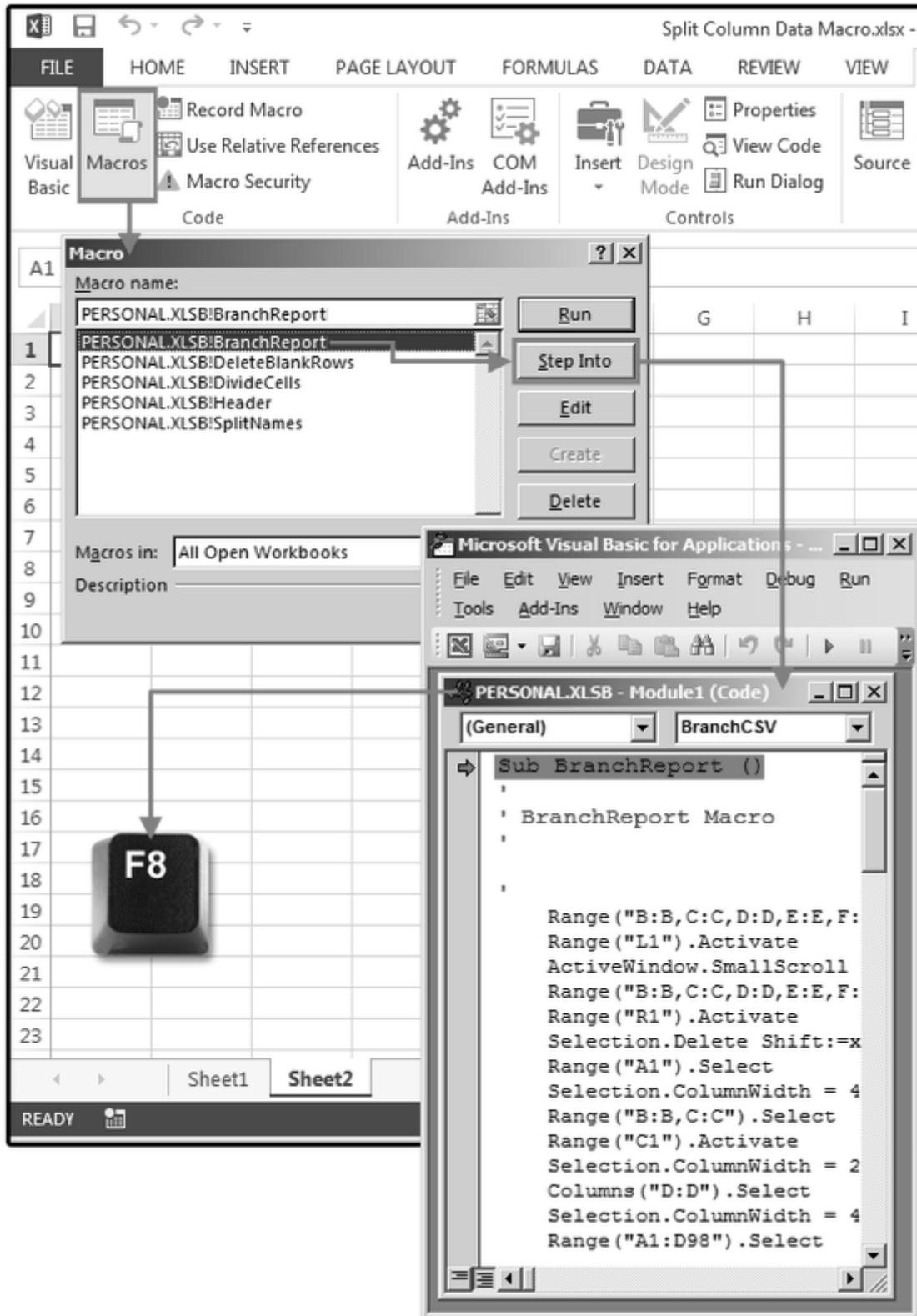
4. Always navigate with directional keys

Use the directional keys (End-Down, Ctrl+Up, etc.) to position your cursor so you can add, change, or delete the data inside the spreadsheet as needed.

Using the mouse to navigate is more complicated and not as reliable. When it comes to macros, use the mouse only for selecting or clicking menu options.

5. Keep macros small and specific

Keep your macros small and specific to the tasks at hand. The bigger the macro, the slower it runs, especially if it's required to perform many functions or calculate a lot of formulas in a large spreadsheet. Also, if you combine all the tasks into one long macro and it fails, it takes forever to locate the point of failure. If you run each macro separately, you can quickly review the results and verify accuracy.



Step through an Excel macro with F8.

In the April Report example, you wouldn't combine the calculation macro with the format macro. You'd use one macro to combine all the branch workbooks into one final spreadsheet, a second macro to calculate the data,

a third macro to format the spreadsheet, a fourth macro to create charts, and perhaps a fifth macro to print.

Excel macros save you time and headaches by automating common, repetitive tasks. And you don't have to be a programmer or know Visual Basic Applications (VBA) to write one. With Excel 2013, it's as simple as recording your keystrokes. Use these tips to make macro recording a cinch.

Other Excel Financial Functions

Single Cash Flow Functions

1) *The Excel FVSCHEDULE Function:* The Excel FVSchedule function calculates the Future Value of an investment with a variable interest rate. The syntax of the function is: FVSCHEDULE(principal, schedule). Where the arguments are as follows:

principal	The present value of the investment.
schedule	An array of values that provides the schedule of interest rates to be applied to the principal. If provided as a range of cells, these may contain numeric values or be empty (empty cells denote a zero interest rate).

Excel Fvschedule Function Example:

In cell B1 of the spreadsheet below, the Excel Fvschedule function is used to calculate the future value of an investment of \$10,000, over 5 years. The investment earns interest of 5% during the first two years and 3.5% during the 3rd, 4th and 5th years.

Formula:

	A	B
1	5.0%	= FV SCHEDULE(10000, A1:A5)
2	5.0%	
3	3.5%	
4	3.5%	
5	3.5%	

Result:

	A	B
1	5.0%	\$12,223.61
2	5.0%	
3	3.5%	
4	3.5%	
5	3.5%	

2) *The Excel PDURATION Function:* The Excel Pduration function calculates the number of periods required for an investment to reach a specified future value.

The syntax of the function is: PDURATION(rate, pv, fv)

Where the arguments are as follows:

rate	-	The interest rate, per period.
pv	-	The present value of the investment.
fv	-	The required future value of the investment.

Duration Function Example

The following spreadsheet shows the Excel Pduration function used to calculate the number of years required for an investment of \$10,000, earning interest of 4% per year, to reach a value of \$15,000.

Formula:		Result:	
	A		A
1	Number of years required for \$10,000 to reach a value of \$15,000 at an interest rate of 4% per year:	1	Number of years required for \$10,000 to reach a value of \$15,000 at an interest rate of 4% per year:
2	=PDURATION(4%, 10000, 15000)	2	10.33803507

With these parameters, the Excel Pduration function returns the value **10.33803507**.

I.e. it would take **10.34** years for an investment of \$10,000, earning interest of 4% per year, to reach a value of \$15,000.

3) The Excel RRI Function: The Excel RRI function calculates the equivalent interest rate for an investment with specified present value, future value and duration.

The syntax of the function is: RRI(nper, pv, fv)

Where the arguments are as follows:

nper	-	The number of periods over which the investment is made.
pv	-	The present value of the investment.
fv	-	The future value of the investment.

RRI Function Example

The following spreadsheet shows the Excel RRI function used to calculate the interest rate required for an investment of \$10,000, to reach a value of \$15,000 over 10 periods.

Formulas:		Results:	
	A		A
1	Interest rate for an investment of \$10,000 to reach a value of \$15,000 over 10 periods:	1	Interest rate for an investment of \$10,000 to reach a value of \$15,000 over 10 periods:
2	=RRI(10, 10000, 15000)	2	4.14%

The above formula returns the value **0.041379744**, or **4.14%**.

I.e. an interest rate of 4.14% per period would be required for an investment of \$10,000 to reach a value of \$15,000 over 10 periods.

Interest Rate Conversion Functions

1) *The Excel EFFECT Function:* The Excel Effect function returns the effective annual interest rate for a given nominal interest rate and number of compounding periods per year.

The syntax of the function is: EFFECT(nominal_rate, npery).

where the arguments are as follows:

nominal_rate	-	The nominal interest rate (must be a numeric value, between 0 and 1).
npery	-	The number of compounding periods per year (must be a positive integer).

Excel Effect Function Example

The spreadsheet below shows three examples of the Excel Effect Function:

Formulas:		Results:	
	A		A
1	=EFFECT(10%, 4)	1	10.38%
2	=EFFECT(10%, 2)	2	10.25%
3	=EFFECT(2.5%, 2)	3	2.52%

Formatting the Result as a Percentage

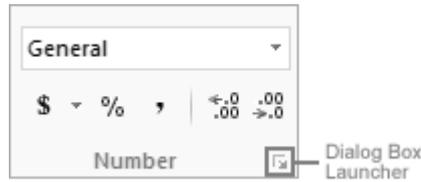
If the result from your Effect function is displayed as a decimal, or shows 0%, both of these problems are likely to be due to the formatting of the cell containing the Effect function.

Therefore the problem can be fixed by formatting the cell as a percentage, with decimal places.

To do this:

1. Select the cell(s) to be formatted as a percentage.
2. Open up the 'Format Cells' dialog box using any one of the following methods:
 - o Right-click on the selected cell or range and select the **Format Cells ...** option from the right-click menu;

or

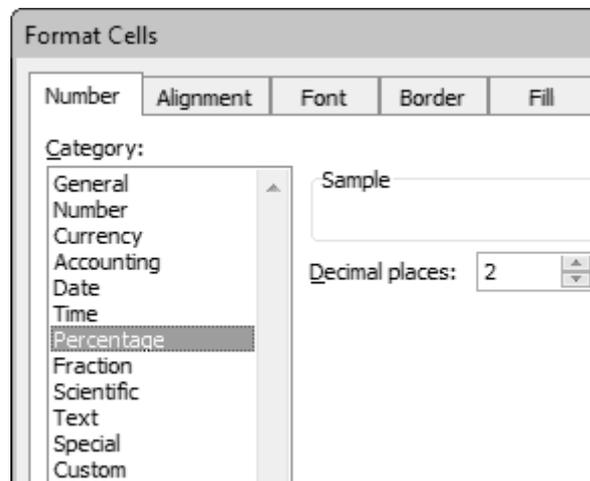


- o Click on the dialog box launcher in the Number grouping within the **Home** tab of the Excel ribbon (see right);

or

- o Use the keyboard shortcut **CTRL-1** (i.e. Select the CTRL key and while holding this down, select the «1» (one) key).

3. Within the 'Format Cells' dialog box:



- o Make sure that the **Number** tab at the top of the dialog box is selected.
- o Select **Percentage** from the **Category** list on the left side of the dialog box.

This will cause further options to appear on the right hand side of the control box, which allow you to select the number of decimal places that you want to be displayed (see right).

- o Once you have selected the number of decimal places that you want to display, click **OK**.

Common Errors

If you get an error from the Excel Effect function this is likely to be one of the following:

Common Errors

- #NUM! - Occurs if either:
- The supplied nominal_rate is ≤ 0
- or
- The supplied npery is < 1 .

- #VALUE! - Occurs if one or both of the supplied arguments are non-numeric.

2) The Excel NOMINAL Function: The Excel Nominal function returns the nominal interest rate for a given

effective interest rate and number of compounding periods per year.

The syntax of the function is: **NOMINAL(effect_rate, npery)**

where the arguments are as follows:

effect_rate	-	The effective interest rate (a numerical value, between 0 and 1).
npery	-	The number of compounding periods per year (must be a positive integer).

Nominal Function Examples

In the following spreadsheet, the Excel Nominal function is used to calculate the nominal interest rate of three loans with different terms.

Formulas:		Results:	
	A		A
1	=NOMINAL(10%, 4)	1	9.65%
2	=NOMINAL(10%, 2)	2	9.76%
3	=NOMINAL(2.5%, 12)	3	2.47%

Formatting the Result as a Percentage

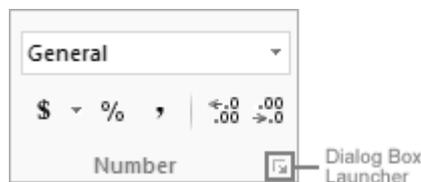
If the result from your Nominal function is displayed as a decimal, or shows 0%, both of these problems are likely to be due to the formatting of the cell containing the function.

Therefore the problem can be fixed by formatting the cell as a percentage, with decimal places.

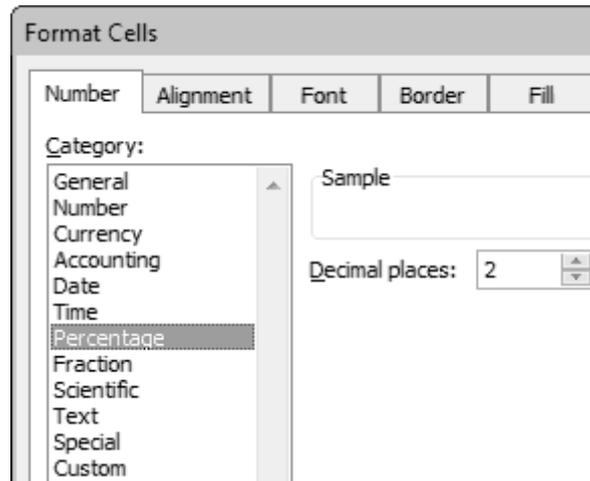
To do this:

1. Select the cell(s) to be formatted as a percentage.
2. Open up the 'Format Cells' dialog box using any one of the following methods:
 - o Right-click on the selected cell or range and select the **Format Cells ...** option from the right-click menu;

or



- o Click on the dialog box launcher in the Number grouping within the **Home** tab of the Excel ribbon (see right);
- or
- o Use the keyboard shortcut **CTRL-1** (i.e. Select the CTRL key and while holding this down, select the «1» (one) key).
3. Within the 'Format Cells' dialog box:



- o Make sure that the **Number** tab at the top of the dialog box is selected.
- o Select **Percentage** from the **Category** list on the left side of the dialog box.
 This will cause further options to appear on the right hand side of the control box, which allow you to select the number of decimal places that you want to be displayed (see right).
- o Once you have selected the number of decimal places that you want to display, click **OK**.

Nominal Function Errors

If you get an error from the Excel Nominal function this is likely to be one of the following:

Common Errors

-
- | | | |
|---------|---|-----------------------------------------------------------------------------------------------------|
| #NUM! | - | Occurs if either: |
| | | <ul style="list-style-type: none"> • The supplied effect_rate is ≤ 0 |
| | | or |
| | | <ul style="list-style-type: none"> • The supplied npery is < 1. |
| | | |
| #VALUE! | - | Occurs if one or both of the supplied arguments are non-numeric. |

Security Functions

Excel ACCRINT Function: The Excel Accrnt function returns the accrued interest for a security that pays periodic interest.

The syntax of the function is: ACCRINT(issue, first_interest, settlement, rate, [par], frequency, [basis], [calc_method])

Where the arguments are as follows:

issue	-	The issue date of the security.
<hr/>		
first_interest	-	The security's first interest date.
<hr/>		
settlement	-	The security's settlement date.
<hr/>		
rate	-	The security's annual coupon rate.

[par] - The security's par value.
 If omitted, [par] takes the default value of 1,000.

frequency - The number of coupon payments per year (must be equal to 1, 2 or 4).

[basis] - An optional argument, that specifies the day count basis to be used in the calculation.

Possible values of [basis] and their meanings are:

[basis]	Day Count Basis
0 (or omitted)	US (NASD) 30/360
1	actual/actual
2	actual/360
3	actual/365
4	European 30/360

[calc_method] - An optional logical value that specifies the way to calculate the total accrued interest when the settlement date is later than the first_interest date.

This can have the value TRUE or FALSE, meaning:

- TRUE - Return the total accrued interest from issue to settlement
- FALSE - Return the accrued interest from first_interest to settlement

If omitted, [calc_method] takes the default value of TRUE.

Accrue Function Examples

The following spreadsheet shows an example of the Excel Accrue function, used to calculate the accrued interest of a security that pays periodic interest. The security's issue date is 01-Jan-2012, the first interest date is 01-Apr-2012, the settlement date is 31-Dec-2013 and the annual coupon rate is 8%. The security's par value is \$10,000, payments are made quarterly, and a US (NASD) 30/360 day count basis is used.

	A	B	C	D
1	issue date:	01-Jan-2012		Accrued interest on a security with an issue date of 01-Jan-2012, a first interest date of 01-Apr-2012 and a settlement date of 31-Dec-2013. The annual coupon rate is 8%, the par value of the security is \$10,000 and payments are made quarterly, on a US (NASD) 30 / 360 basis:
2	first interest date:	01-Apr-2012		=ACCRINT(B1, B2, B3, 8%, 10000, 4)
3	settlement date:	31-Dec-2013		

The above function gives the result **\$1,600**.

Note that, in the example above, the [basis] argument is omitted, and therefore takes the default value of 0 (US (NASD) 30/360 basis).

Accrue Function Errors

If you get an error from the Excel Accrue function, this is likely to be one of the following:

Common Errors

#NUM! - Occurs if either:

- The supplied rate argument is ≤ 0 or the supplied [par] argument is ≤ 0
or
- The supplied frequency argument is not equal to 1, 2 or 4
or
- The supplied [basis] argument is not equal to 0, 1, 2, 3 or 4
or
- The supplied issue \geq settlement.

#VALUE! - Occurs if either:

- The supplied issue, first_interest, or settlement arguments are not valid dates
or
- Any of the supplied arguments are non-numeric.

2) Excel ACCRINTM Function: The Excel Accrue function returns the accrued interest for a security that pays interest at maturity.

The syntax of the function is: ACCRINTM(issue, settlement, rate, [par], [basis])

Where the arguments are as follows:

issue - The issue date of the security.

settlement - The security's maturity date.

rate - The security's annual coupon rate.

[par] - The security's par value.

If omitted, [par] takes the default value of 1,000.

[basis] - An optional argument, that specifies the day count basis to be used in the calculation.

Possible values of [basis] and their meanings are:

[basis]	Day Count Basis
0 (or omitted)	US (NASD) 30/360
1	actual/actual
2	actual/360
3	actual/365
4	European 30/360

Accrnt Function Examples

The following spreadsheet shows an example of the Excel Accrntm function, used to calculate the accrued interest of a security that pays interest at maturity. The security has an issue date of 01-Jan-2012 and a settlement date of 31-Dec-2012. The annual coupon rate is 8% and the par value of the security is \$10,000. The US (NASD) 30/360 day count basis is used.

A	B	C	D
1	issue date:	01-Jan-2012	Accrued interest on a security with an issue date of 01-Jan-2012 and a settlement date of 31-Dec-2012. The annual coupon rate is 8%, the par value of the security is \$10,000 and a US (NASD) 30 / 360 day count basis is used:
2	settlement date:	31-Dec-2012	=ACCRINTM (B1, B2, 8%, 10000)

The above function gives the result **\$800**

Note that, in the example above, the [basis] argument is omitted, and therefore takes the default value of 0 (US (NASD) 30/360 basis).

Accrntm Function Errors

If you get an error from the Excel Accrntm function, this is likely to be one of the following:

Common Errors

- #NUM! - Occurs if either:
- The supplied rate is ≤ 0 or the supplied [par] is ≤ 0
 - or
 - The supplied [basis] argument is not equal to 0, 1, 2, 3 or 4
 - or
 - The supplied issue \geq settlement.

- #VALUE! - Occurs if either:
- The supplied issue or settlement arguments are not valid dates
 - or
 - Any of the supplied arguments are non-numeric.

3) *The Excel DISC Function*: The Excel DISC function calculates the Discount Rate for a security.

The syntax of the function is: DISC(settlement, maturity, pr, redemption, [basis])

Where the arguments are as follows:

settlement	-	The security's settlement date (i.e. the date that the coupon is purchased).
maturity	-	The security's maturity date (i.e. the date that the coupon expires).
pr	-	The security's price per \$100 face value.
redemption	-	The security's redemption value per \$100 face value.
[basis]	-	An optional argument which defines the day count basis to be used in the calculation. Possible values are:

Basis	Day Count Basis
0 (or omitted)	US (NASD) 30/360
1	actual/actual
2	actual/360
3	actual/365
4	European 30/360

The financial day count basis rules are explained further on the [Wikipedia Day Count Convention page](#)

Disc Function Example

In the following example, the Excel Disc function is used to calculate the discount rate of a security purchased on 01-Apr-2016, with Maturity date 31-Mar-2021. The price per \$100 face value is \$95, the Redemption value is \$100, and the US (NASD) 30/360 day count basis is used:

	A	B
1	Settlement Date:	01-Apr-2016
2	Maturity Date:	31-Mar-2021
3	=DISC(B1, B2, 95, 100)	

The above function returns the value **0.01**.

I.e. the discount rate for a security with the above terms is **1.0%**.

Note that, in the above example:

- As recommended, the date arguments have been supplied to the Disc function as references to cells containing dates;
- As the [basis] argument has been omitted, the function uses the default value 0 (denoting the US

(NADS) 30/360 day count basis).

Disc Function Errors

If you get an error from the Excel Disc function, this is likely to be one of the following:

Common Errors

-
- #NUM! - Occurs if either:
 - The supplied maturity date \leq the settlement date;
 - Invalid numeric values are input for the pr, redemption or [basis] arguments (i.e. if either: $pr \leq 0$; $redemption \leq 0$; or [basis] is supplied and is not equal to 1, 2, 3 or 4).

 - #VALUE! - Occurs if either:
 - The supplied settlement or maturity arguments are not a valid Excel dates;
 - Any of the supplied arguments are non-numeric.

4) *The Excel DURATION Function:* The Excel Duration function calculates the Duration (specifically, the Macaulay Duration) of a security that pays periodic interest, assuming a par value of \$100.

The syntax of the function is: **DURATION (settlement, maturity, coupon, yld, frequency, [basis])**

Where the arguments are as follows:

settlement	-	The settlement date of the security (i.e. the date that the coupon is purchased).												
maturity	-	The maturity date of the security (i.e. the date that the coupon expires).												
coupon	-	The security's annual coupon rate.												
yld	-	The security's annual yield.												
frequency	-	The number of coupon payments per year. This must be one of the following:												
		<table border="1" style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="width: 10px; text-align: center;">1</td> <td style="width: 10px; text-align: center;">-</td> <td style="text-align: left;">Annually</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">-</td> <td style="text-align: left;">Semi-Annually</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">-</td> <td style="text-align: left;">Quarterly</td> </tr> </table>	1	-	Annually	2	-	Semi-Annually	4	-	Quarterly			
1	-	Annually												
2	-	Semi-Annually												
4	-	Quarterly												
[basis]	-	An optional integer argument which specifies the financial day count basis that is used by the security. Possible values are:												
		<table border="1" style="margin-left: 20px; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Basis</th> <th style="width: 85%;">Day Count Basis</th> </tr> </thead> <tbody> <tr> <td>0 (or omitted)</td> <td>US (NASD) 30/360</td> </tr> <tr> <td>1</td> <td>actual/actual</td> </tr> <tr> <td>2</td> <td>actual/360</td> </tr> <tr> <td>3</td> <td>actual/365</td> </tr> <tr> <td>4</td> <td>European 30/360</td> </tr> </tbody> </table>	Basis	Day Count Basis	0 (or omitted)	US (NASD) 30/360	1	actual/actual	2	actual/360	3	actual/365	4	European 30/360
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0 (or omitted)	US (NASD) 30/360													
1	actual/actual													
2	actual/360													
3	actual/365													
4	European 30/360													

Excel Duration Function Example

In the following example, the Excel Duration function is used to calculate the annual duration of a coupon

purchased on 01-Apr-2015, with Maturity date 31-Mar-2025 and a coupon rate of 10%. The yield is 8% and payments are made quarterly.

	A	B
1	Settlement Date:	01-Apr-2015
2	Maturity Date:	31-Mar-2025
3	=DURATION(B1, B2, 10%, 8%, 4)	

The function returns the Duration **6.671645021** years.

Note that, in the above example:

- As recommended, the settlement and maturity dates have been input as references to cells containing dates.
- The [basis] argument has been omitted from the function, and so the default value 0 (denoting the US (NADS) 30/360 day count basis) is used.

Duration Function Errors

If you get an error from the Duration function, this is likely to be one of the following:

Common Errors

-
- #NUM!** - Occurs if either:
- The supplied settlement date is \geq maturity date
 - or
 - Invalid numbers are supplied for the coupon, yld, frequency or [basis] arguments. (i.e. if either: coupon $<$ 0; yld $<$ 0; frequency is not equal to 1, 2 or 4; or [basis] is supplied and is not equal to 0, 1, 2, 3 or 4).
- #VALUE!** - Occurs if either:
- Any of the supplied arguments are non-numeric
 - or
 - One or both of the supplied settlement or maturity dates are not a valid Excel dates.

5) The Excel INTRATE Function: The Excel Intrate function calculates the interest rate for a fully invested security.

The syntax of the function is: INTRATE (settlement, maturity, investment, redemption, [basis])

where the arguments are as follows:

-
- | | | |
|------------|---|------------------------------------------------------------------------------|
| settlement | - | The security's settlement date (i.e. the date that the coupon is purchased). |
| maturity | - | The security's maturity date (i.e. the date that the coupon expires). |
| investment | - | The initial amount invested into the security. |
-

-
- redemption - The amount to be received at maturity.
-
- [basis] - An optional argument, that specifies the day count basis to be used in the calculation.

Possible values of [basis] and their meanings are:

[basis]	Day Count Basis
0 (or omitted)	US (NASD) 30/360
1	actual/actual
2	actual/360
3	actual/365
4	European 30/360

Intrate Function Example

In the spreadsheet below, the Excel Intrate function is used to calculate the interest rate of an investment of \$1,000, which was used to purchase a security on 01-Apr-2005. The security matured on 31-Mar-2010, with a redemption value of \$2,125 and the US (NASD) 30/360 day count basis is used:

	A	B	C	D
1	settlement date:	01-Apr-2005		Interest rate of a security with value \$1,000, invested on 01-Apr-2005, which matures on 31-Mar-2010, with a redemption value of \$2,125. The US (NASD) 30/360 day count basis is used:
2	maturity date:	31-Mar-2010		=INTRATE(B1, B2, 1000, 2125)

The formula in cell D2 of the above spreadsheet returns the value **0.225**, or **22.5%**.

Note that, in the above example:

- As recommended, the date arguments are supplied to the function as references to cells containing dates;
- The [basis] argument is omitted and so takes on the default of 0 (US (NASD) 30/360 basis).

6) *The Excel MDURATION Function*: The Excel Mduration function calculates the Modified Macaulay Duration of a security that pays periodic interest, assuming a par value of \$100.

The syntax of the function is: MDURATION (settlement, maturity, coupon, yld, frequency, [basis])

Where the arguments are as follows:

-
- settlement - The settlement date of the security (i.e. the date that the coupon is purchased).
-
- maturity - The maturity date of the security (i.e. the date that the coupon expires).
-
- coupon - The security's annual coupon rate.
-
- yld - The security's annual yield.
-

frequency - The number of coupon payments per year. This must be one of the following:

1	-	Annually
2	-	Semi-Annually
4	-	Quarterly

[basis] - An optional integer argument which specifies the financial day count basis that is used by the security. Possible values are:

Basis	Day Count Basis
0 (or omitted)	US (NASD) 30/360
1	actual/actual
2	actual/360
3	actual/365
4	European 30/360

Excel Mduration Function Example

The following spreadsheet uses the Excel Mduration function to calculate the modified Macaulay Duration of a security that with a settlement date 01-Apr-2015, a maturity date 31-Mar-2025 and a yield of 8%. The coupon rate is 10% and payments are made quarterly.

	A	B
1	Settlement Date:	01-Apr-2015
2	Maturity Date:	31-Mar-2025
3	=MDURATION(B1, B2, 10%, 8%, 4)	

Note that, in the above Mduration function call:

- As recommended, the date arguments have been input as references to cells containing dates.
- The [basis] argument has been omitted and so the function uses the default value 0 (denoting the US (NADS) 30/360 day count basis).

Mduration Function Errors

If you get an error from the Mduration function, this is likely to be one of the following:

Common Errors

#NUM! - Occurs if either:

- The supplied settlement date is \geq maturity date
- or
- Invalid numbers are supplied for the coupon, yld, frequency or [basis] arguments. (I.e. if either: coupon < 0 ; yld < 0 ; frequency is not equal to 1, 2 or 4; or [basis] is supplied and is not equal to 0, 1, 2, 3 or 4).

#VALUE! - Occurs if either:

- Any of the supplied arguments are non-numeric
- or
- One of both of the supplied settlement or maturity dates are not a valid Excel dates.

Time Value of Money Related Some Examples

Example 1 - Future Value of Lump Sums

suppose that you have \$100 to invest for a period of 5 years at an interest rate of 10% per year. How much will you have accumulated at the end of this time period?

In this problem, the \$100 is the present value (PV), NPer is 5, and Rate is 10%. Open a new workbook and enter the data as shown below, but leave B5 blank for now.

	A	B	C	D	E
1	Present Value	\$ 100			
2	Years	5			
3	Annual Rate	10%			
4					
5	Future Value	\$161.05	←	=FV(B3,B2,0,-B1)	

To find the future value of this lump sum investment we will use the FV function, which is defined as: **FV(rate,nper,pmt,pv,type)**

Select cell B5 and then type: =FV(B3,B2,0,-B1) and then press Enter. The answer that you get should be 161.05.

A Couple of Notes:

1) Every time value of money problem has either 4 or 5 variables (corresponding to the 5 basic financial variables). Of these, you will always be given 3 or 4 and asked to solve for the other. In this case, we have a 4-variable problem and were given 3 of them (Nper, Rate, and PV) and had to solve for the 4th (FV). Be sure that any variables not in the problem are set to 0, otherwise they will be included in the calculation. In this case, we did not have an annuity payment (PMT), so the third argument in the FV function was set to 0.

2) Note that we left out the optional Type argument. In all of these functions, the Type argument tells Excel when the first cash flow occurs (0 if at the end of the period, 1 if at the beginning). This argument is identical to setting your financial calculator to End Mode or Begin Mode, and only affects the answer when there is an annuity payment. When solving lump sum problems such as this, the argument has no effect. If you had typed =FV(B3,B2,0,-B1,1) you would have gotten the same answer.

3) Note that, unlike most financial calculators, there is no argument to set the compounding frequency. This is actually a good thing, in my opinion, because those settings on financial calculators cause all kinds of trouble when people forget to set them correctly. In Excel functions, you must set NPer to be the total number of periods, Rate to be the interest rate per period, and PMT to be the annuity payment per period. So, if this problem had said that the compounding was monthly (annual was implied), then we would have typed =FV(B3/12,B2*12,0,-B1).

4) Note that our interest rate (in B3) was entered into that cell as 0.10 (or, you could type 10%). This is different than financial calculators. In a calculator, your interest rate would be entered as 10 instead of 0.10. The calculator automatically divides the number entered into the interest rate by 100. Excel makes no adjustment to Rate, so you must enter it as a decimal. Had you entered 10 (without the percent sign) into B3, the future value would have come out to \$16,105,100 — obviously incorrect. That’s because Excel would think that your

interest rate was 1,000% per year.

5) Notice that we entered -B1 (-100) for the PV argument in the function. Most financial calculators (and spreadsheets) follow the Cash Flow Sign Convention. This is simply a way of keeping the direction of the cash flow straight. Cash inflows are entered as positive numbers and cash outflows are entered as negative numbers. In this problem, the \$100 was an investment (i.e., a cash outflow) and the future value of \$161.05 would be a cash inflow in five years. Had you entered the \$100 as a positive number no harm would have been done, but the answer would have been returned as a negative number. This would be correct had you borrowed \$100 today (cash inflow) and agreed to repay \$161.05 (cash outflow) in five years.

6) We can change any of the variables in this problem without needing to re-enter all of the data. For example, suppose that we wanted to find out the future value if we left the money invested for 10 years instead of 5. Simply change B2 to 10, and you'll find that the answer in B5 is 259.37.

7) Please note that it is important that you always use cell references in your formulas. Never type a number directly into any formulas or Excel functions (unless that number will never change). If you do type numbers into formulas, then you will have to remember to change each formula that relies on that number or else you will get errors. The best practice is to always have an "input area" somewhere on your worksheet that contains all of the variables. Then, each formula or function that you use will get its values by referencing cells in the input area. (Note that I broke this rule in #3, above. That was for ease of explanation. I should have added a row with the label "Compounding" and put the 12 in there instead.)

Example 2 — Present Value of Lump Sums

Solving for the present value of a lump sum is nearly identical to solving for the future value, except that we use the PV function. One important thing to remember is that the present value will always (unless the interest rate is negative) be less than the future value. Keep that in mind because it can help you to spot incorrect answers due to a wrong input. Let's try a new problem:

Suppose that you are planning to send your daughter to college in 18 years. Furthermore, assume that you have determined that you will need \$100,000 at that time in order to pay for tuition, room and board, party supplies, etc. If you believe that you can earn an average annual rate of return of 8% per year, how much money would you need to invest today as a lump sum to achieve your goal?

In this case, we already know the future value (\$100,000), the number of periods (18 years), and the per period interest rate (8% per year). We want to find the present value. Create a worksheet like the one below:

	A	B	C	D	E
1	Future Value	\$ 100,000			
2	Years	18			
3	Annual Rate	8%			
4					
5	Present Value	\$25,024.90	←	=PV(B3,B2,0,-B1)	

We need to use the PV function, which is defined as: **PV (rate,nper,pmt,fv,type)**

So, select B5 and enter the formula: =PV(B3,B2,0,-B1) and see that you would need to invest \$25,025 today to fund your daughter's future education. That is a lot of money to invest all at once, but we'll see on the next page that you can lessen the pain by investing smaller amounts each year. Alternatively, if you are willing to take on considerably more risk than you might be able to earn, say, 11% per year. If you change the value in B3 to 11%, then you can see that you would only have to invest \$15,282.22.

FUTURE PROJECTIONS AND INTEGRATED FINANCIAL STATEMENTS

An integrated 3-statement financial model is a type of model that forecasts a company's income statement, balance sheet and cash flow statement.

While accounting enables us to understand a company's historical financial statements, forecasting those financial statements enables us to explore how a company will perform under a variety of different assumptions and visualize how a company's operating decisions (i.e. "let's reduce prices"), investing decisions (i.e. "let's buy an additional machine") and financing decisions (i.e. "let's borrow a bit more") all interact to impact the bottom line in the future.

A well-built 3-statement financial model helps insiders (corporate development professionals, FP&A professionals) and outsiders (institutional investors, sell side equity research, investment bankers and private equity) see how the various activities of a firm work together, making it easier to see how decisions impact the overall performance of a business.

Formatting a 3-statement model

It is critical that a complex financial model like the 3-statement model adheres to a consistent set of best practices. This makes both the task of modelling and auditing other people's models far more transparent and useful. We have written an Ultimate Guide to Financial Modelling Best Practices, but we'll summarize some key takeaways here.

The most basic formatting rules are:

a) Color code your model so that inputs are blue and formulas are black. The table below shows other color-coding best practices:

Type of cells	Colour
Hard-coded numbers (inputs)	Blue
Formulas (calculations)	Black
Links to other worksheets	Green
Links to other files	Red
Links to data providers (i.e. CIQ, Factset)	Dark Red

b) Format data consistently (for example keep consistent unit scale, use 1 decimal place for numbers, 2 for per share data, 3 for share count).

c) Avoid partial inputs that commingle cell references with hard numbers.

d) Maintain standard column widths and consistent header labels.

Periodicity

One of the first decisions to make in a 3-statement model concerns the periodicity of the model. Namely, what are the shortest time periods the model will be partitioned into: annual, quarterly, monthly or weekly. This will typically be determined by the 3-statement financial model's purpose. Below we outline some general rules of thumb:

- a) **Annual models:** Common when using the model to drive a DCF model valuation. This is because a DCF model needs at least 5 years of explicit forecasts before making terminal value. LBO models are often also annual models, as the investment horizon is around 5 years. An interesting wrinkle with annual models is the handling of the "stub period," which captures the latest 3-, 6-, or 9-month historical data).
- b) **Quarterly models:** Common in equity research, credit, financial planning and analysis, mergers and acquisitions (accretion/dilution) models where near-term issues are a catalyst. These models often roll up into an annual build-up.

- c) **Monthly models:** Common in restructurings and project finance where month to month liquidity tracking is critical. One thing to note is that the data required for a monthly build-up is usually unavailable to outside investors unless it is privately provided by management (companies don't report monthly data). These models often roll up into a quarterly build-up.
- d) **Weekly models:** Common in bankruptcies. The most common weekly model is called the thirteen-week cash flow model (TWCF). The TWCF is a required submission in a bankruptcy process to track cash and liquidity.

Model Structure

When models get large, adhering to a strict structure is critical. Key rules of thumb include:

- Use roll-forward schedules when forecasting balance sheet items.
- Aggregate inputs in one worksheet or one section of the model and separate them from calculations and outputs.
- Avoid linking files together.

Basic elements of an integrated 3-statement financial model

3-statement models include a variety of schedules and outputs, but the core elements of a 3-statement model are, as you may have guessed, the income statement, balance sheet and cash flow statement. A key feature of an effective model is that it is “integrated,” which simply means that the 3-statement models are modeled in a way that accurately captures the relationship and inter-linkages of the various line items across the financial statements. An integrated model is powerful because it enables the user to change an assumption in one part of the model in order to see how it impacts all other parts of the model consistently and accurately.

Exhibit 6

An integrated 3-statement model



Source: <https://www.wallstreetprep.com/knowledge/build-integrated-3-statement-financial-model/>

Gathering data ahead of financial modelling

Before firing up Excel to begin building the model, analysts need to gather the relevant reports and disclosures. At a minimum, they will need to gather the company's latest SEC filings, press releases and possibly equity research reports. Data is much harder to find for private companies than for public companies, and reporting requirements vary across countries. We have compiled a guide on gathering historical data needed for financial modelling here.

The income statement

The income statement illustrates a company's profitability. All three statements are presented from left to right, with at least 3 years of historical results present in order to provide historical ratios and growth rates from which

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forecasts are based. Inputting the historical income statement data is the first step in building a 3-statement financial model. The process involves either manual data entry from the 10K or press release, or the use of an Excel plugin such as Factset or Capital IQ to drop historical data directly into Excel.

Forecasting typically begins with a revenue forecast followed by the forecasting of various expenses. The net result is a forecast of the company's income and earnings per share. The income statement covers a specified period such as quarter or year.

Financial Statement Model for Apple- Income Statement

File Home Insert Page Layout Formulas Data Review View Developer BOOST Tell me what you want to do									
P24									
A	B	C	D	E	F	G	H	I	J
1									
2	Financial Statement Model for Apple								
3	<i>\$ mm except per share</i>								
4									
11		Historicals			Forecasts				
12	INCOME STATEMENT								
13	Fiscal year	2012A	2013A	2014A	2015P	2016P	2017P	2018P	2019P
14	Fiscal year end date	9/24/11	9/29/12	9/28/14	9/30/15	9/30/16	9/30/17	9/30/18	9/30/19
15									
16	Revenue	108,249	156,508	170,910	179,381	188,389	196,830	206,514	217,643
17	Cost of sales (enter as -)	(64,431)	(87,846)	(106,606)	(112,830)	(117,932)	(123,216)	(129,278)	(136,245)
18	Gross Profit	43,818	68,662	64,304	66,550	70,458	73,614	77,236	81,398
19	Research & development (enter as -)	(2,429)	(3,381)	(4,475)	(5,202)	(5,840)	(6,102)	(6,402)	(6,747)
20	Selling, general & administrative (enter as -)	(7,599)	(10,040)	(10,830)	(12,198)	(12,810)	(13,384)	(14,043)	(14,800)
21	Operating profit (EBIT)	33,790	55,241	48,999	49,150	51,807	54,128	56,791	59,852
22	Interest income	519	1,088	1,616	1,540	1,614	1,701	1,811	1,928
23	Interest expense (enter as -)	0	0	(136)	(329)	(329)	(317)	(317)	(252)
24	Other expense (enter as -)	(104)	(566)	(324)	(324)	(324)	(324)	(324)	(324)
25	Pretax profit	34,205	55,763	50,155	50,037	52,767	55,189	57,961	61,204
26	Taxes (enter expense as -)	(8,283)	(14,030)	(13,118)	(13,160)	(13,719)	(14,349)	(15,070)	(15,913)
27	Net income	25,922	41,733	37,037	36,877	39,048	40,840	42,891	45,291
28									
29	Basic shares outstanding	924	935	925	882	847	816	789	764
30	Impact of dilutive securities	12	11	6	6	6	6	6	6
31	Diluted shares outstanding	937	945	932	888	854	822	795	770
32									
33	Basic EPS	\$28.05	\$44.64	\$40.03	\$41.82	\$46.08	\$50.04	\$54.39	\$59.27
34	Diluted EPS	\$27.68	\$44.15	\$39.75	\$41.52	\$45.74	\$49.65	\$53.96	\$58.79
35									
36	<u>Growth rates & margins</u>								
37	Revenue growth	NA	44.6%	9.2%	5.0%	5.0%	4.5%	4.9%	5.4%
38	Gross profit as % of sales	40.5%	43.9%	37.6%	37.1%	37.4%	37.4%	37.4%	37.4%
39	R&D margin	2.2%	2.2%	2.6%	2.9%	3.1%	3.1%	3.1%	3.1%
40	SG&A margin	7.0%	6.4%	6.3%	6.8%	6.8%	6.8%	6.8%	6.8%
41	Tax rate	24.2%	25.2%	26.2%	26.3%	26.0%	26.0%	26.0%	26.0%

Source: Income Statement Screenshot from the Wall Street Prep Premium Package Training Program

The Balance Sheet

Unlike the income statement, which shows operating results over a period of time (a year or a quarter), the balance sheet is a snapshot of the company at the end of the reporting period. The balance sheet shows the company's resources (assets) and funding for those resources (liabilities and shareholder's equity). Inputting historical balance sheet data is similar to inputting data in the income statement. The data is inputted either manually or through an Excel plugin.

In large part, the balance sheet is driven by the operating assumptions we make on the income statement. Revenues drive the operating assumptions in the income statement, and this continues to hold true in the balance sheet: Revenue and operating forecasts drive working capital items, capital expenditures and a variety of other items. Think of the income statement as the horse and the balance sheet as the carriage. The income statement assumptions are driving the balance sheet forecasts.

Financial Statement Model for Apple- Balance Sheet

	2013A	2014A	2015A	2016A	2017A	2018A	2019A
Financial Statement Model for Apple							
<i>\$ mm except per share</i>							
BALANCE SHEET							
<i>Fiscal year</i>	2013A	2014A	2015A	2016A	2017A	2018A	2019A
<i>Fiscal year end date</i>	9/29/12	9/28/14	9/30/15	9/30/16	9/30/17	9/30/18	9/30/19
Cash & equivalents ST & LT market. securities	121,251	146,761	152,236	161,082	169,207	182,348	191,985
Accounts receivable	10,930	13,102	13,454	14,318	14,959	15,695	16,541
Inventory	791	1,764	1,805	1,887	1,971	2,068	2,180
Deferred tax assets	2,583	3,453	3,453	3,453	3,453	3,453	3,453
Other current assets (inc. non-trade receivables)	14,220	14,421	14,421	14,421	14,421	14,421	14,421
Property, plant & equipment	15,452	16,597	19,687	23,571	26,738	29,154	30,783
Acquired intangible assets (inc. Goodwill)	5,359	5,756	4,706	3,721	2,888	2,282	1,848
Other assets	5,478	5,146	5,146	5,146	5,146	5,146	5,146
Total assets	176,064	207,000	214,908	227,599	238,784	254,567	266,356
Accounts payable	21,175	22,367	22,905	24,412	25,506	26,760	28,203
Accrued expenses & def rev. (current & non-current)	20,015	23,916	23,858	23,925	23,816	23,956	23,941
Revolver	0	0	0	0	0	0	0
Long term debt	0	16,960	16,960	16,960	14,460	14,460	8,460
Other non-current liabilities	16,664	20,208	23,208	26,208	29,208	32,208	35,208
Total liabilities	57,854	83,451	86,930	91,505	92,990	97,384	95,811
Common stock / additional paid in capital	16,422	19,764	21,978	24,191	26,616	29,162	31,844
Treasury stock	0	0	(23,968)	(47,936)	(71,904)	(95,872)	(119,840)
Retained earnings / accumulated deficit	101,289	104,256	130,439	160,310	191,552	224,364	259,012
Other comprehensive income / (loss)	499	(471)	(471)	(471)	(471)	(471)	(471)
Total equity	118,210	123,549	127,978	136,094	145,794	157,183	170,545
<i>Balance check</i>	<i>0</i>						
Ratios							
Net debt	(121,251)	(129,801)	(135,276)	(144,122)	(154,747)	(167,888)	(183,525)
Asset turnover (Revenue / Total assets)	0.89x	0.83x	0.83x	0.83x	0.82x	0.81x	0.82x
Net profit margin	26.7%	21.7%	20.6%	20.7%	20.7%	20.8%	20.8%
Return on assets (ROA)	23.7%	17.9%	17.2%	17.2%	17.1%	16.8%	17.0%
Return on book equity (ROE)	35.3%	30.0%	28.8%	28.7%	28.0%	27.3%	26.6%

Source: Balance Sheet Screenshot from the Wall Street Prep Premium Package Training Program

Cash flow statement

The final core element of the 3-statement model is the cash flow statement. Unlike on the income statement or the balance sheet, you aren't actually forecasting anything explicitly on the cash flow statement and it isn't necessary to input historical cash flow statement results before forecasting. That's because the cash flow statement is a **pure reconciliation of the year-over-year changes** in the balance sheet.

Every individual line item on the cash flow statement should be referenced from elsewhere in the model (it should not be hardcoded) as this is reconciliation. Constructing the cash flow statement correctly is critical to getting the balance sheet to balance.

Financial Statement Model for Apple- Cash Flow Statement

Financial Statement Model for Apple									
\$ mm except per share									
CASH FLOW STATEMENT									
Fiscal year	2013A	2014A	2015P	2016P	2017P	2018P	2019P		
Fiscal year end date	9/29/12	9/28/14	9/30/15	9/30/16	9/30/17	9/30/18	9/30/19		
Net income				36,877	39,048	40,840	42,891	45,291	
Depreciation and amortization				6,929	7,838	8,886	9,961	11,211	
Stock based compensation				2,214	2,213	2,426	2,545	2,682	
Accounts receivable				(352)	(864)	(642)	(736)	(846)	
Inventory				(41)	(82)	(85)	(97)	(111)	
Accounts payable				538	1,507	1,094	1,255	1,442	
Accrued expenses & def revenues				(58)	68	(109)	139	(15)	
Other current assets (inc. non-trade receivables)				0	0	0	0	0	
Deferred tax assets (DTAs)				0	0	0	0	0	
Other assets				0	0	0	0	0	
Other non current liabilities				3,000	3,000	3,000	3,000	3,000	
Non-cash (PIK) interest				0	0	0	0	0	
Cash from operating activities				49,107	52,728	55,410	58,959	62,654	
Capital expenditures				(8,969)	(10,738)	(11,219)	(11,771)	(12,406)	
Purchases of intangible assets				0	0	0	0	0	
Cash from investing activities				(8,969)	(10,738)	(11,219)	(11,771)	(12,406)	
Long term debt				0	0	(2,500)	0	(6,000)	
Common dividends				(10,694)	(9,176)	(9,597)	(10,079)	(10,643)	
New share issuances				0	0	0	0	0	
Share repurchases				(23,968)	(23,968)	(23,968)	(23,968)	(23,968)	
Other comprehensive income / (loss)				0	0	0	0	0	
Revolver				0	0	0	0	0	
Cash from financing activities				(34,662)	(33,144)	(36,065)	(34,047)	(40,611)	
Net change in cash during period				5,475	8,846	8,125	13,140	9,637	

Source: Cash Flow Statement Screenshot from the Wall Street Prep Premium Package Training Program

Model plugs: cash and revolver

A universal feature of a 3-statement model is that cash and a revolving credit line serve as model “plugs.” This simply means that a 3-statement model has an automatic way of ensuring that, when the model projects a cash shortfall after all the line items are forecast, additional debt via a “revolver” account will automatically increase to finance the shortfall. Conversely, if the model projects a cash surplus, cash will accumulate by the amount of the surplus. While this seems fairly logical, modelling this can be tricky.

How a revolver works in a 3 statement model

1) Assuming you want to maintain at least \$100 in cash during the forecast, is the “plug” cash or the revolver? Why?

Income Statement (Figures in Dollar \$)

	2010	2011	2012	2013
Revenues	1000	1050	1102.5	1157.6
Expenses	800	840	882	926.1
Net Income	200	210	220.5	231.5
Balance Sheet	2010	2011	2012	2013
Cash	100			
Accounts Receivable	450	472.5	496.1	520.9
Land	80	84	88.2	92.6
Total Assets	630	556.5	584.3	613.5
Revolver	0			
Accounts Payable	400	420	441	463.1
Liabilities	400	420	441	463.1
Common Stock	130	136.5	143.3	150.5
Retained Earnings	100	310	530.5	762
Total Liabilities & Equity	630	866.5	1114.8	1375.6
Balance Check	0			

Cash Flow Statement (Figures in Dollar \$)

	2010	2011	2012	2013
Net Income		210	220.5	231.5
Changes in accounts receivable		(22.5)	(23.6)	(24.8)

Changes in accounts payable		20	21	22.1
Cash from Operating Activities		207.5	217.9	228.8
Purchase of Land		(4)	(4.2)	(4.4)
Cash from Investing Activities		(4)	(4.2)	(4.4)
Issuance of Common Stock		6.5	6.8	7.2
Cash from Financing Activities		6.5	6.8	7.2
Net Change in Cash		210	220.5	231.5
Cash needed from the Revolver				
Cash available at the beginning of period (BOP)		100	0	0
Minimum cash desired		100	100	100
Cash generated during the current year		210	220.5	231.5
Cash Surplus / (Deficit)		210	120.5	131.5

Source: <https://www.wallstreetprep.com/knowledge/modeling-revolving-credit-line-excel-free-template/>

Calculating shares and earnings per share (EPS)

For public companies, projecting earning per share is a key forecast. Forecasting the numerator of EPS is described in detail in our income statement forecasting guide, but forecasting shares outstanding can be done in a variety of ways, ranging from simply straight-lining the historical share count to a more sophisticated analysis that takes into account forecasts for share repurchases and issuances.

One of the last steps in building a 3-statement financial model is forecasting shares outstanding. The share count matters because it tells you how much of a company is owned by each shareholder. In the 3-statement model, this is important because it will help us forecast earnings per share (EPS), which is a ratio that shows how much of current-period net income is “owned” by each shareholder.

The logic behind this is that the more earnings, the more valuable each share becomes. The process of forecasting shares outstanding can range from simply straight-lining historical results to a more complicated analysis involving forecasts of future share repurchases and stock issuances.

Forecasting shares outstanding and earnings per share (EPS)

There are 3 ways that analysts forecast basic and diluted shares:

Approach 1 (simple): Straight line weighted average basic and diluted shares

This approach is simple. In Apple's case above, you would simply assume basic shares of 5,470,820,000 and diluted shares of 5,500,281,000 going forward. The approach works well for companies:

1. Not engaged in significant share repurchases or stock issuances and
2. For which no significant difference exists between the latest basic share count (front cover of 10K) and weighted average basic share count (income statement).

This, however, doesn't work well for Apple. Because of Apple's share repurchase program, its latest share count (5,332,313,000 as shown on front cover of its 2016 10K) is significantly lower than its weighted average (5,470,820,000 as shown on the 2016 income statement). Assuming Apple continues to engage in buybacks, straight-lining last year's share count would overestimate future shares (and thus understate EPS), making this approach sub-optimal.

Approach 2 (moderately simple): Straight line the latest basic shares outstanding and add the historical difference between basic and diluted weighted average shares

One problem with the first approach is that it isn't straight-lining the latest actual share count, but rather the average during the latest period. That means that if the company's latest share count is significantly lower or higher than the period-weighted average, the forecast will be slightly off. While the difference is usually immaterial, when there is a significant difference between latest actual share count and basic weighted average share count (as we see with Apple), analysts should employ the following process:

1. Identify the latest basic share count on the front cover of the latest 10K (for annual models) or 10Q (for quarterly models) and straight-line this to forecast the future weighted average basic shares.
2. Calculate the effect of diluted securities as the difference between historical basic and diluted shares and assume this difference will persist throughout the forecast period.
3. As you see on Apple's income statement below, the difference between the basic and diluted share count can be calculated as $5,500,281,000 - 5,470,820,000 = 29,461,000$.
4. Add this difference to the forecast for basic shares to calculate future diluted shares.

So for Apple, we would forecast basic weighted average shares of 5,332,313,000 (as shown on front cover of its 2016 10K), and diluted weighted average shares of $5,332,313,000 + 29,461,000 = 5,361,774,000$. Unfortunately, this approach still isn't optimal for Apple, for which we continue to forecast significant future share repurchases. Every year, the share counts need to decline to reflect this.

Approach 3 (complex): Estimate new shares from issuance and repurchased shares

For companies we expect will engage in significant buyback or share issuance activity, neither approaches are sufficient. Imagine that Apple is expected to repurchase \$20 billion worth of Apple stock annually over the foreseeable future. Certainly, this will have the effect of lowering the actual share count, but to estimate exactly how many shares can be repurchased with \$20,000,000,000, we have to predict Apple's share count over the forecast period. We can do this by using net income growth forecasts as a proxy for share price growth. A similar process is done for calculating new shares from additional stock issuances:

Rollforward: Basic Shares Outstanding + # of new shares issued – # of shares repurchased = Basic shares Outstanding (EOP).

Line Item	How to Forecast
Basic Shares Outstanding	Latest actual basic share count is always disclosed on the front cover of the most recent 10K/10Q
# of new shares issued	Forecast the # of shares issued as \$ repurchased (current period) / Estimated share price (current period) ¹
# of shares repurchased	Forecast the # of shares repurchased as \$ repurchased (current period) / Estimated share price (current period) ¹

1. Estimate the share price as prior period share price x (1+ current period consensus EPS growth rate).

Below you can see how this process is completed for Apple.

All figures in millions, except per share data	Actual			Forecast		
	2016	2017	2018	2019	2020	2021
Year						
Net Income	45,687.0	48,956.0	51,550.7	53,973.5	56,294.4	58,602.5
Year-over-year % growth		7.2%	5.3%	4.7%	4.3%	4.1%
Apple Estimated Share Price	\$167.52	\$179.51	\$189.02	\$197.90	\$206.41	\$214.88
Share Issuance		0.0	0.0	0.0	0.0	0.0
Share Repurchases		20,000.00	20,000.00	20,000.00	20,000.00	20,000.00
Basic Shares- BOP		5,332.3	5,220.9	5,115.1	5,014.0	4,917.1
Additions		0.0	0.0	0.0	0.0	0.0
Subtractions		(111.4)	(105.8)	(101.1)	(96.9)	(93.1)
Basic Shares- EOP	5,332.3	5,220.9	5,115.1	5,014.0	4,917.1	4,824.1
Weighted Average Basic Shares	5,470.8	5,276.6	5,168.0	5,064.6	4,965.6	4,870.6
Effect of Dilutive Securities	29.5	29.5	29.5	29.5	29.5	29.5
Weighted Average Dilutive Securities	5,500.3	5,306.1	5,197.5	5,094.0	4,995.0	4,900.1
Basic EPS	\$8.35	\$9.28	\$9.97	\$10.66	\$11.34	\$12.03
Diluted EPS	\$8.31	\$9.23	\$9.92	\$10.60	\$11.27	\$11.96

Source: <https://www.wallstreetprep.com/knowledge/forecasting-companys-earnings-per-share-shares-outstanding/>

KEY FINANCIAL RATIOS

The key financial ratios discussed under this section are:

- 1) Price Ratios
- 2) Profitability Ratios
- 3) Liquidity Ratios
- 4) Debt Ratios
- 5) Efficiency Ratios

The aforesaid ratios are discussed in the ensuing paragraphs.

1) Price Ratios: Price ratios are used to get an idea of whether a stock's price is reasonable or not. They are easy to use and generally pretty intuitive, but do not forget this major caveat: Price ratios are "relative" metrics, meaning they are useful only when comparing one company's ratio to another company's ratio, a company's ratio to itself over time, or a company's ratio to a benchmark.

a) Price-to-Earnings Ratio (P/E) :

What you need: Income Statement, Most Recent Stock Price

The formula: P/E Ratio = Price per Share / Earnings Per Share

What it means: Think of the price-to-earnings ratio as the price you'll pay for \$1 of earnings. A very, very general rule of thumb is that shares trading at a "low" P/E are a value, though the definition of "low" varies from industry to industry.

b) PEG Ratio:

What you need: Income Statement, Most Recent Stock Price

The formula: PEG Ratio = (P/E Ratio) / Projected Annual Growth in Earnings per Share

What it means: The PEG ratio uses the basic format of the P/E ratio for a numerator and then divides by the potential growth for EPS, which you'll have to estimate. The two ratios may seem to be very similar but the PEG ratio is able to take into account future earnings growth. A very generally rule of thumb is that any PEG ratio below 1.0 is considered to be a good value.

c) Price-to-Sales Ratio:

What you need: Income Statement, Most Recent Stock Price

The formula: Price-to-Sales Ratio = Price per Share / Annual Sales Per Share

What it means: Much like P/E or P/B, think of P/S as the price you'll pay for \$1 of sales. If you are comparing two different firms and you see that one firm's P/S ratio is 2x and the other is 4x, it makes sense to figure out why investors are willing to pay more for the company with a P/S of 4x. The P/S ratio is a great tool because sales figures are considered to be relatively reliable while other income statement items, like earnings, can be easily manipulated by using different accounting rules.

d) Price-to-Book Ratio (P/B):

What you need: Balance Sheet, Most Recent Stock Price

The formula: P/B Ratio = Price per Share / Book Value per Share

What it means: Book value (BV) is already listed on the balance sheet, it's just under a different name: shareholder equity. Equity is the portion of the company that owners (i.e. shareholders) own free and clear.

Dividing book value by the number of shares outstanding gives you book value per share.

Like P/E, the P/B ratio is essentially the number of dollars you'll have to pay for \$1 of equity. And like P/E, there are different criteria for what makes a P/B ratio "high" or "low."

e) Dividend Yield:

What you need: Income Statement, Most Recent Stock Price

The formula: $\text{Dividend Yield} = \text{Dividend per Share} / \text{Price per Share}$

What it means: Dividends are the main way companies return money to their shareholders. If a firm pays a dividend, it will be listed on the balance sheet, right above the bottom line. Dividend yield is used to compare different dividend-paying stocks. Some people prefer to invest in companies with a steady dividend, even if the dividend yield is low, while others prefer to invest in stocks with a high dividend yield.

f) Dividend Payout Ratio:

What you need: Income Statement

The formula: $\text{Dividend Payout Ratio} = \text{Dividend} / \text{Net Income}$

What it means: The percentage of profits distributed as a dividend is called the dividend payout ratio. Some companies maintain a steady payout ratio, while other try to maintain a steady number of dollars paid out each year (which means the payout ratio will fluctuate). Each company sets its own dividend policy according to what it thinks is in the best interest of its shareholders. Income investors should keep an especially close eye on changes in dividend policy.

2. Profitability Ratios: Profitability ratios tell you how good a company is at converting business operations into profits. Profit is a key driver of stock price, and it is undoubtedly one of the most closely followed metrics in business, finance and investing.

a) Return on Assets (ROA):

What you need: Income Statement, Balance Sheet

The formula: $\text{Return on Assets} = \text{Net Income} / \text{Average Total Assets}$

What it means: A company buys assets (factories, equipment, etc.) in order to conduct its business. ROA tells you how good the company is at using its assets to make money. For example, if Company A reported \$10,000 of net income and owns \$100,000 in assets, its ROA is 10%. For every \$1 of assets it owns, it can generate \$0.10 in profits each year. With ROA, higher is better.

b) Return on Equity (ROE):

What you need: Income Statement, Balance Sheet

The formula: $\text{Return on Equity} = \text{Net Income} / \text{Average Stockholder Equity}$

What it means: Equity is another word for ownership. ROE tells you how good a company is at rewarding its shareholders for their investment. For example, if Company B reported \$10,000 of net income and its shareholders have \$200,000 in equity, its ROE is 5%. For every \$1 of equity shareholders own, the company generates \$0.05 in profits each year. As with ROA, higher is better.

c) Profit Margin:

What you need: Income Statement

The formula: $\text{Profit Margin} = \text{Net Income} / \text{Sales}$

What it means: Profit margin calculates how much of a company's total sales flow through to the bottom line. As

you can probably tell, higher profits are better for shareholders, as is a high (and/or increasing) profit margin.

3) Liquidity Ratios: Liquidity ratios indicate how capable a business is of meeting its short-term obligations. Liquidity is important to a company because when times are tough, a company without enough liquidity to pay its short-term debts could be forced to make unfavourable decisions in order to raise money (sell assets at a low price, borrow at high interest rates, sell part of the company to a vulture investor, etc.).

a) Current Ratio:

What you need: Balance Sheet

The formula: $\text{Current Ratio} = \text{Current Assets} / \text{Current Liabilities}$

What it means: The current ratio measures a company's ability to pay its short-term liabilities with its short-term assets. If the ratio is over 1.0, the firm has more short-term assets than short-term debts. But if the current ratio is less than 1.0, the opposite is true and the company could be vulnerable to unexpected bumps in the economy or business climate.

b) Quick Ratio:

What you need: Balance Sheet

The formula: $\text{Quick Ratio} = (\text{Current Assets} - \text{Inventory}) / \text{Current Liabilities}$

What it means: The quick ratio (also known as the acid-test ratio) is similar to the quick ratio in that it's a measure of how well a company can meet its short-term financial liabilities. However, it takes the concept one step further. The quick ratio backs out inventory because it assumes that selling inventory would take several weeks or months. The quick ratio only takes into account those assets that could be used to pay short-term debts today.

4. Debt Ratios: These ratios concentrate on the long-term health of a business, particularly the effect of the capital and finance structure on the business.

a) Debt to Equity Ratio:

What you need: Balance Sheet

The formula: $\text{Debt-to-Equity Ratio} = \text{Total Liabilities} / \text{Total Shareholder Equity}$

What it means: Total liabilities and total shareholder equity are both found on the balance sheet. The debt-to-equity ratio measures the relationship between the amount of capital that has been borrowed (i.e. debt) and the amount of capital contributed by shareholders (i.e. equity). Generally speaking, as a firm's debt-to-equity ratio increases, it becomes more risky because if it becomes unable to meet its debt obligations, it will be forced into bankruptcy.

b) Interest Coverage Ratio

What you need: Balance Sheet

The formula: $\text{Debt-to-Equity Ratio} = \text{Total Liabilities} / \text{Total Shareholder Equity}$

What it means: Total liabilities and total shareholder equity are both found on the balance sheet. The debt-to-equity ratio measures the relationship between the amount of capital that has been borrowed (i.e. debt) and the amount of capital contributed by shareholders (i.e. equity). Generally speaking, as a firm's debt-to-equity ratio increases, it becomes more risky because if it becomes unable to meet its debt obligations, it will be forced into bankruptcy.

c) Interest Coverage Ratio:

What you need: Income Statement

The formula: Interest Coverage Ratio = EBIT / Interest Expense

What it means: Both EBIT (aka, operating income) and interest expense are found on the income statement. The interest coverage ratio, also known as times interest earned (TIE), is a measure of how well a company can meet its interest payment obligations. If a company can't make enough to make interest payments, it will be forced into bankruptcy. Anything lower than 1.0 is usually a sign of trouble.

5) Efficiency Ratios: These ratios give investors insight into how efficiently a business is employing resources invested in fixed assets and working capital. It's can also be a reflection of how effective a company's management is.

a) Asset Turnover Ratio:

What you need: Income Statement, Balance Sheet

The formula: Asset Turnover Ratio = Sales / Average Total Assets

What it means: Like return on assets (ROA), the asset turnover ratio tells you how good the company is at using its assets to make products to sell. For example, if Company A reported \$100,000 of sales and owns \$50,000 in assets, its asset turnover ratio is 2x. For ever \$1 of assets it owns, it can generate \$2 in sales each year.

b) Inventory Turnover Ratio:

What you need: Income Statement, Balance Sheet

The formula: Inventory Turnover Ratio = Costs of Goods Sold / Average Inventory

What it means: If the company you're analyzing holds has inventory, you want that company to be selling it as fast as possible, not stockpiling it. The inventory turnover ratio measures this efficiency in cycling inventory. By dividing costs of goods sold (COGS) by the average amount of inventory the company held during the period, you can discern how fast the company has to replenish its shelves. Generally, a high inventory turnover ratio indicates that the firm is selling inventory (thereby having to spend money to make new inventory) relatively quickly.

(For further details on key financial ratios, please refer the subjects- Corporate & Management Accounting and Financial and Strategic Management of Executive Programme)

SUMMARY

Key components of a business model

1. **High-level vision:** A basic description of your business model — two or three sentences that are your true north.
2. **Key objectives:** The top goals and how you plan to measure them.
3. **Customer targets and challenges:** The types of customers who will purchase your solution, along with their exact pain points.
4. **Solution:** The primary way that you solve your customer's problems.
5. **Value:** The core elements of your solution that make it unique and differentiated (and ultimately valuable).
6. **Pricing:** How you will package your solution and what it will cost.
7. **Messaging:** A clear and compelling message that explains why your solution is worth buying.
8. **Go-to-Market:** The channels that you will use to market and sell to your customers.
9. **Investment required:** The costs required to make the solution a success.

- 10. Growth opportunity:** The ways that you will grow the business, including key partnerships if you need them.

Types of Business Models

There are nine business models for a start-up business. They are as follows-

1. Become The Middleman (AKA The “Warby Parker” Model)
2. Become A Marketplace
3. The Subscription Model
4. Customized Everything
5. On-Demand Model
6. The Modernized Direct Sales Model
7. Freemium Model
8. Reverse Auction
9. Virtual Good Model

Features of a Sustainable Business Model

1. Diversity
2. Modularity
3. Openness
4. Slack resources
5. Matching cycles
6. Identify your specific audience
7. Establish business processes
8. Develop a strong value proposition
9. Determine key business partners
10. Leave room for innovation

Review of Key Excel Functions

The five significant points of constructing Macros through MS-Excel are- Macro names; Use relative (not absolute) cell addresses; Always begin at Home; Always navigate with directional keys and Keep macros small and specific.

Key Financial Ratios

The key financial ratios are- Price Ratios; Profitability Ratios; Liquidity Ratios; Debt Ratios and Efficiency Ratios.

SELF TEST QUESTIONS

- Q1. Make a study of business models used in the following sectors of India:
a) Steel, b) Coal, c) Power, d) Telecommunication and e) Transportation and Logistics.

- Q2. With the help of Excel Functions, solve the following:
- a) Treasury Bill Functions- i) TBILLEQ (Calculates the bond-equivalent yield for a treasury bill)
 - ii) TBILLPRICE (Calculates the price per \$100 face value for a treasury bill)
 - iii) TBILLYIELD (Calculates the yield for a treasury bill)
 - b) Functions for a Series of Periodic Constant Cash Flows
 - i) CUMIPMT (Calculates the cumulative interest paid between two specified periods)
 - ii) CUMPRINC (Calculates the cumulative principal paid on a loan, between two specified periods)
 - iii) FV (Calculates the future value of an investment with periodic constant payments and a constant interest rate).
- Q3. Referring the key financial ratios, ascertain the financial health of the companies covered under the following sectors-
- i) Real Estate;
 - ii) IT / ITES
 - iii) Banking and Financial Services

LIST OF FURTHER READINGS

1. Business Model Generation by Alexander Osterwalder and Yves Pigneur, published by John Wiley & Sons
2. Guide to Business Modelling by Graham Friend and John Tennent, published by The Economist.
3. The Business Model Book- Design, Build and Adapt Business Ideas that Thrive by Adam J. Bock and Gerard George.
4. Financial Modelling & Valuation- A Practical Guide to Investment Banking and Private Equity by Paul Pignataro, published by Wiley.

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Lesson 14

Business Model Analysis

LESSON OUTLINE

- Facets of Analysis- Dynamic and Non-dynamic aspects
- Revenues: Cash flows and their timing and Revenue drivers
- Expenses: Cash flows and their timing
- Investment required through cash flow breakeven: Working Capital, Maximum financing required and Cash flow breakeven timing
- Sensitivity Analysis: Key Success Factors
- Structuring and Designing Models
- SUMMARY
- SELF TEST QUESTIONS

LEARNING OBJECTIVES

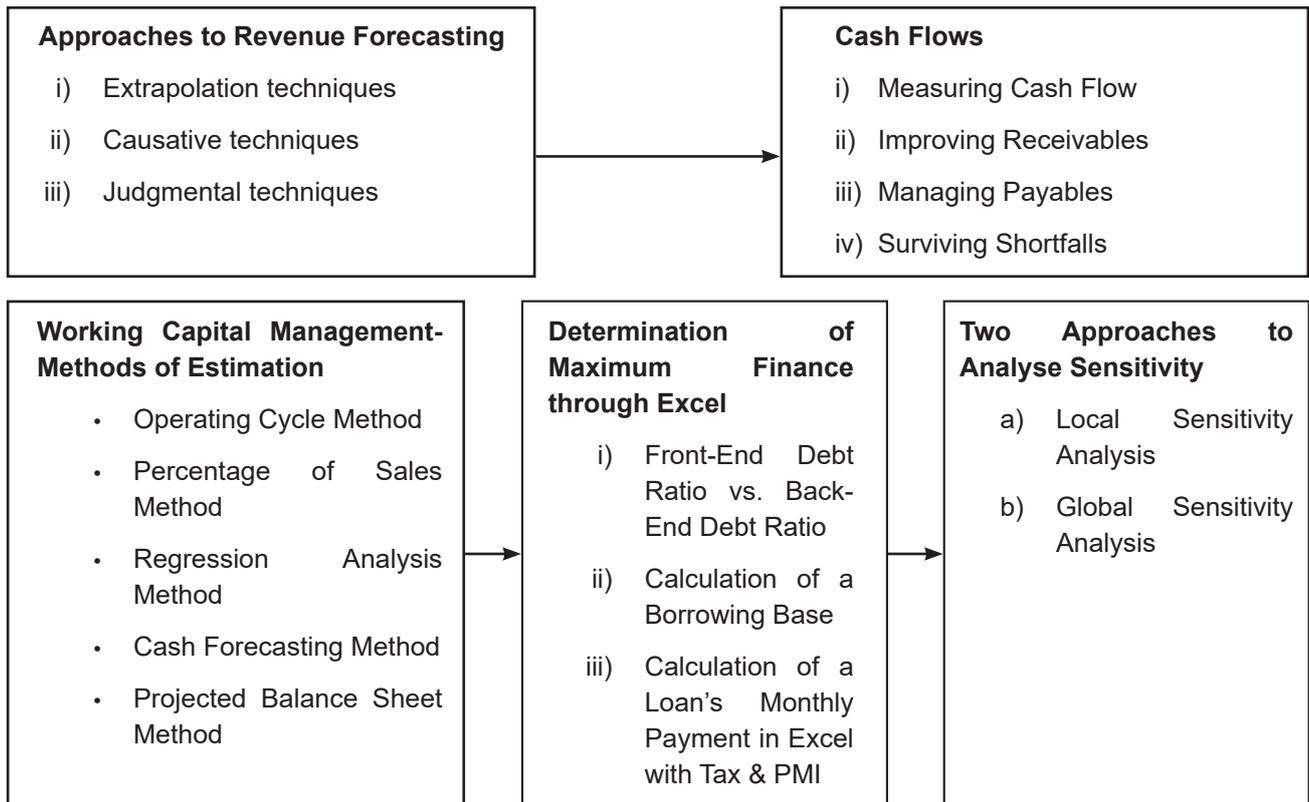
The knowledge of business modelling remains half baked, unless and until one develops deep insights about the analysis of business model. There are various significant aspects of business and one of them is cash flows and various elements associated with it. Further, working capital being the life blood of the business needs to be analysed properly.

This study lesson goes deep into various critical concepts like, facets of analysis, cash flow analysis, working capital management, sensitivity analysis etc. in order to develop a robust understanding on various approaches / tools to analyse the various business scenarios as well as financial concepts.

ORIENTATION

This lesson requires expert level knowledge, as critical financial aspects pertaining to a business have been covered in this lesson. Unless one possess a robust understanding in the areas of cash flows and their timings for revenues and expenses, working capital requirement, sensitivity analysis etc. The thorough understanding of the mentioned concepts is of paramount importance, as they have practical applications in corporate world.

FAMILY TREE OF CONCEPTS



INTRODUCTION

Facets of Analysis – Dynamic and Non-Dynamic Aspects

A business model could include four phases namely: business model creation, business model extension, business model revision, and business model termination (Cavalcante et al. 2011).

In order for organizations to continue having a competitive advantage, based on their business model the organisations have to consider the need for extension and revision, and if necessary, the termination of certain business models. In this context, dynamism could be described as the ability for the organisation to see the need to move from mere creation of a business model to extension and all through revision to termination when necessary. Having sensed these needs, organisations should harness their capabilities towards transformation of their models. Thus a business model going through these phases could be said to be dynamic.

There are challenges in making business models dynamic because it is common for organisations to get used to a business model that has proven successful over a period of time. This may contribute to the organisations being unwilling to welcome any changes. However, there are motivations for organisations to make their

business models flexible and adaptive to the needs and trends of the market. These motivations largely depend on the nature of the organisation. Some examples include: increasing profitability, increasing market share, outwitting competitors, establishing platform leadership and perhaps making competitors irrelevant.

Writing about the impact of a winning business model, Kim and Mauborgne (2005) argued that companies should not only win in competition but make their competitors irrelevant. This can be achieved through value innovation. Therefore, the value for an organisation to have an adaptive business model which is able to respond to the needs of the external market based on the firm's dynamic capabilities can be immeasurable. It is therefore possible that dynamic business models thrive on firms' dynamic capabilities because according to Casadesus-Masanell & Ricart (2010) business models lie in the hearts of competitiveness and thus must attract managers attention towards having sustained competitive advantage.

An example to consider would be IBM, the giant in computer industry. The company, which has been in business for about a century, experienced a difficult time about two decades ago. The company almost closed down, having had its stock price decline rapidly, laying off over 60,000 employees and losing goodwill (Harreld et al. 2007). The company which later had about 700bn SEK in revenue during 2010 (IBM Corporation 2010) has a fascinating story. This dramatic change was a result of change in some key aspects including its business strategy and business model. IBM changed from being just a technology based company to a broad-based solutions provider with an unprecedented new world open systems and on-demand capabilities (Harreld et al. 2007). In their work, Harreld et al. (2007) argued that the change factor in the IBM story was the exploitation of their dynamic capabilities.

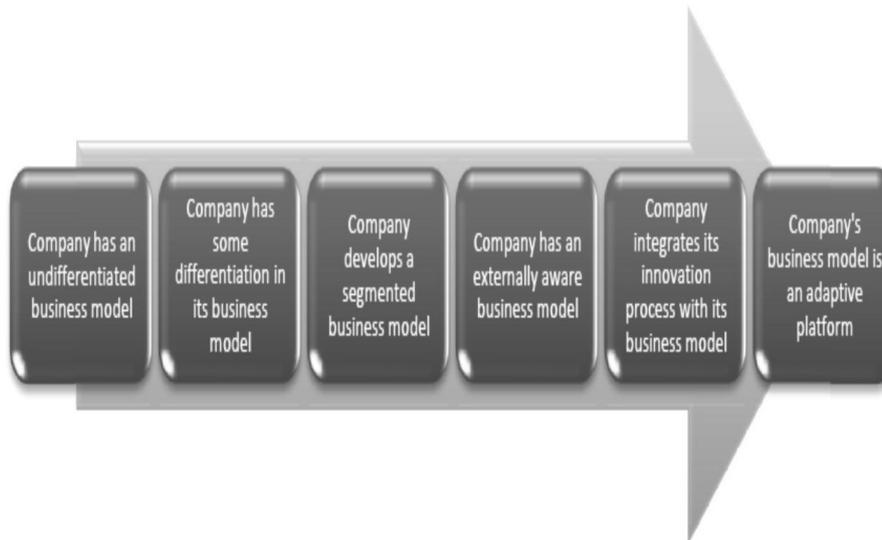
There are several other companies that have had groundbreaking successes by making their business models dynamic. Apple, Wal-Mart, FedEx, Hilti and Tata-Nano are some examples (Johnson et al. 2008).

Organisations of all sizes need to have a workable business model and this is even more important for global companies. In order to grow, many companies engage in market penetration, market development, product development and even diversification. The desire to grow makes global companies with presence in all continents complex and they usually operate using multiple business strategies and business models. These global companies many times structure their operations into different Business Units. According to Koontz & Weihrich (2007) a strategic business unit is a separate little business established as an entity within a larger organisation with the purpose of ensuring that a product/service line is promoted or handled as if it was an independent business. Each of these business units has its own goals, objectives and targets. Additionally, they also have their own strategies and models in carrying out their activities. Strategic business units of an organisation which according to Javidan (1998) have their set of skills and know-how that are peculiar to them which they integrate and coordinate, aim for goal congruence. Goal congruence is the aligning of individual departmental/ strategic business unit's goals to those of the overall organisation (Vancouver et al. 1994). They do this in response to the heightened competition in the market place and to the dynamism of their internal capabilities (Hendrick 2009). Thus organisations that have dynamic business model both at the overall firm level or individual business unit level, can more effectively create and capture value by enabling themselves to respond to the needs of the external market, based on the firm's dynamic capabilities.

Researchers have come up with a wide range of frameworks on the conceptualisation of organisations' business models. For instance, Chesbrough (2007) highlighted the different phases an organisation could be in their business model or rather the types of business models of an organisation ranging from undifferentiated business model to an adaptive platform (please refer exhibit 1)

Exhibit 1

Types of Business Model Innovation



Source: Chesbrough's listed types of business model innovation (2007)

Stressing on the adaptive platform which aids integration of business models in value networks, Chesbrough argued that in order for an organisation to make their business model dynamic they need to establish their technologies as basis for platform innovation. Chesbrough's argument for an adaptive platform was technology-based. However, there could be non-technology organisations. Technology organisations are also seeking alternative competitive platforms thus our study extends the adaptability to the overall business level in organisations.

This research studies how organisations can make their business models dynamic. This is important because although there have been researches on the need for organisations to be innovative with their business models (Nenonen & Storbacka 2010; Baden-Fuller & Morgan 2010; Johnson et al. 2008), the literature is still deficient in regards to operationalizing the theory (de Reuver et al. 2009). The cause of this among other reasons, is traceable to two issues raised by Johnson et al. (2008) including:

- Lack of adequate contextual definition of dynamics and processes of business model innovation.
- Poor understanding of current business models which results in undermining their business model potentials and not knowing when it is appropriate to leverage or exit their current models.

There are various aspects of the business model innovation discussion as well as several related concepts which could be examined in judging how they could bring dynamism to the business model. For example, the stakeholders' interest (Lewis et al. 2007), customer value proposition (Zhang et al. 2010), the profit formula¹ (Johnson et al. 2008), process architecture (Tankhiwale 2009), corporate governance and innovation (Belenzon et al. 2009), customer relationship management (Hedman & Kalling 2002), organisation process maturity model (Rosemann & De Bruin 2005), open innovation (Chesbrough 2004), open business model (Jaring 2009), project management & change management (Jetter et al. 2008), organisation learning and knowledge management (Malhotra 2002), networking and collaboration (Miles et al. 2006), dynamic capability (Teece et al. 1997). Some other relating to implementation include strategy and execution (Springer 2008). Each of these has important implications on business model innovation. For example Belenzon et al. (2009) highlighted the nearnegligible-but-possibly-significant aspects of the relationship between ownership, corporate governance and innovations. It is possible that the governance of an organisation impacts its innovativeness, as they found that innovative companies deliberately choose structures conducive for R&D. In addition, assessing the

impacting of technological innovation on the business model of an organisation, Jetter et al. (2008) stressed that while companies attempt to adapt their business model and corporate culture to global changes; it becomes imperative to master professional change management.

It will be interesting to discuss the “Three A” model, propounded by Giesen et al. (2010). Three As model applies to the industry model, the revenue model as well as the enterprise model for companies to make their business models more dynamic. The three As include aligning both internal and external resources, competences and opportunities; analysing the financial and overall business impact in order to gain business intelligence; as well as adaptability which involves building flexibility into the business model. These three activities (aligning, analysing and adapting) might become important because of the potentials that organisations can realise by engaging in them. However, some other issues are left out or not explicitly stated which include for example how to identify these internal and external resources, competences and opportunities. Thus it would be useful to integrate the three A’s in other frameworks to have a robust model that capture every important point.

Contemporary organisations might not have difficulties in adjusting their operations, aligning their activities or changing their patterns to fit the needs of their customers. However, there are several other factors that need to be considered in implementing or incorporating dynamism into their business models. Some of these factors include the appropriate strategies in reaching the goal or reaching the market. In considering the appropriate strategies for execution, Yip (2004) outlined the possibilities of either incrementally or radically implementing the change the organisation seeks. While Yip outlined these, the authors like to connect the exploitation of dynamic capabilities with these two options while organisations move towards making their business model dynamic. Springer (2008) stressed on strategy formulation and its efficient execution in a dynamic economic environment.

REVENUES: CASH FLOWS AND THEIR TIMING AND REVENUE DRIVERS

Forecasting Revenue

Forecasting revenue is one the biggest challenges for the business modeller. The first problem is producing a meaningful and useful definition of the market place. In the telecommunications, information technology and media sectors, for instance, there is such a high degree of convergence that it is becoming increasingly difficult to distinguish between the separate markets. Modellers may also have incomplete or inaccurate data as a basis for their forecasts. Even when an industry-wide revenue forecast has been produced, estimating a business’s market share of that revenue can be even more difficult. Market share has many determinants and some important factors, like, brand strength, are difficult to gauge and model.

Approaches to Revenue Forecasting

The different approaches to forecasting can be classified in several ways. A useful classification is as follows:

- i) *Extrapolation techniques*: Extrapolation techniques, like, time series analysis, implicitly assume that the past will be a reasonable predictor of the future. This assumption may be valid for mature and stable businesses, like the water and gas utilities. However, many industry sectors are experiencing rising levels of structural change. The use extrapolative techniques for these sectors may provide poor results.
- ii) *Causative techniques*: Causative techniques, such as, multiple regression, attempt to comprehend the basic relationships that determine the dynamics of a market. This understanding, combined with a set of assumptions about the future, provides the basis for the forecast. Because the underlying relationships are often estimated from historical data, these techniques are useful when only small, incremental changes in assumptions are expected in the future.
- iii) *Judgmental techniques*: Modellers may often be asked to produce a forecast for a new product or market

where there are no available historic data. In these cases, forecasting can become judgmental and highly subjective. Although the forecasts can be refined through studying the results of market research and by examining the experiences of similar or related products in other markets and countries, the task of forecasting becomes more like an art than a science.

In practice, majority of modellers depend on a blend of all three techniques. They may establish the current market trends through time series analysis, and attempt to understand market dynamics through multiple regression methods. This understanding will then be combined with their belief of how these relationships might develop in the future to produce a forecast.

Decomposition of Revenue

The modeller's ultimate objective is to develop a forecast for the total revenue of a business. This can be decomposed into a number of elements. The individual elements that comprise the total revenue for a business will depend on the industry in which it operates. In several industries total revenue can be computed from an estimate of the number of customers who demand a product or service; the quantity of that product or service that they demand; and the price charged per unit of that product or services. The exact definitions of customers, products and services, and prices may differ, but the general approach will usually prove valid. Decomposing a forecast into the individual elements allows the modeller to observe to what extent a change in total revenue is a result of changes in quantities (sometimes referred to as volume changes) and changes in price.

Historically, in the case of the mobile communication industry, a major proportion of the total revenue was generated by voice traffic. The voice revenue could be decomposed into a number of readily identifiable elements:

- a) The number of customers using the network.
- b) The average number of minutes of voice calls made by each customer.
- c) The average price charged for each minute of use.

The total voice revenue for a mobile business could be calculated using the following equation:

Average number of customers x Average number of voice minutes x Average price per minute

To generate the most precise forecast and to gain the maximum insight into the economics of a business, it is often necessary to generate a prediction for total revenue through a combination of forecasts of the individual elements.

Cash Flows

Cash is king when it comes to the financial management of a growing company. The lag between the time you have to pay your suppliers and employees and the time you collect from your customers is the problem, and the solution is cash flow management. At its simplest, cash flow management means delaying outlays of cash as long as possible while encouraging anyone who owes you money to pay it as rapidly as possible.

i) *Measuring Cash Flow*: Prepare cash flow projections for next year, next quarter and, if you're on shaky ground, next week. An accurate cash flow projection can alert you to trouble well before it strikes.

Understand that cash flow plans are not glimpses into the future. They're educated guesses that balance a number of factors, including your customers' payment histories, your own thoroughness at identifying upcoming expenditures, and your vendors' patience. Watch out for assuming without justification that receivables will continue coming in at the same rate they have recently, that payables can be extended as far as they have in the past, that you have included expenses such as capital improvements, loan interest and principal payments, and that you have accounted for seasonal sales fluctuations.

Start your cash flow projection by adding cash on hand at the beginning of the period with other cash to be received from various sources. In the process, you will wind up gathering information from salespeople, service representatives, collections, credit workers and your finance department. In all cases, you'll be asking the same question: How much cash in the form of customer payments, interest earnings, service fees, partial collections of bad debts, and other sources are we going to get in, and when?

The second part of making accurate cash flow projections is detailed knowledge of amounts and dates of upcoming cash outlays. That means not only knowing when each penny will be spent, but on what. Have a line item on your projection for every significant outlay, including rent, inventory (when purchased for cash), salaries and wages, sales and other taxes withheld or payable, benefits paid, equipment purchased for cash, professional fees, utilities, office supplies, debt payments, advertising, vehicle and equipment maintenance and fuel, and cash dividends.

ii) *Improving Receivables*: If you got paid for sales the instant you made them, you would never have a cash flow problem. Unfortunately, that doesn't happen, but you can still improve your cash flow by managing your receivables. The basic idea is to improve the speed with which you turn materials and supplies into products, inventory into receivables, and receivables into cash. Here are specific techniques for doing this:

- Offer discounts to customers who pay their bills rapidly.
- Ask customers to make deposit payments at the time orders are taken.
- Require credit checks on all new noncash customers.
- Get rid of old, outdated inventory for whatever you can get.
- Issue invoices promptly and follow up immediately if payments are slow in coming.
- Track accounts receivable to identify and avoid slow-paying customers. Instituting a policy of cash on delivery (c.o.d.) is an alternative to refusing to do business with slow-paying customers.

iii) *Managing Payables*: Top-line sales growth can conceal a lot of problems-sometimes too well. When you are managing a growing company, you have to watch expenses carefully. Don't be lulled into complacency by simply expanding sales. Any time and any place you see expenses growing faster than sales, examine costs carefully to find places to cut or control them. Here are some more tips for using cash wisely:

- a) Take full advantage of creditor payment terms. If a payment is due in 30 days, don't pay it in 15 days.
- b) Use electronic funds transfer to make payments on the last day they are due. You will remain current with suppliers while retaining use of your funds as long as possible.
- c) Communicate with your suppliers so they know your financial situation. If you ever need to delay a payment, you'll need their trust and understanding.
- d) Carefully consider vendors' offers of discounts for earlier payments. These can amount to expensive loans to your suppliers, or they may provide you with a change to reduce overall costs. The devil is in the details.
- e) Don't always focus on the lowest price when choosing suppliers. Sometimes more flexible payment terms can improve your cash flow more than a bargain-basement price.

iv) *Surviving Shortfalls*: Sooner or later, you will foresee or find yourself in a situation where you lack the cash to pay your bills. This doesn't mean you're a failure as a businessperson-you're a normal entrepreneur who can't perfectly predict the future. And there are normal, everyday business practices that can help you manage the shortfall.

The key to managing cash shortfalls is to become aware of the problem as early and as accurately as possible. Banks are wary of borrowers who have to have money today. They'd much prefer lending to you before you

need it, preferably months before. When the reason you are caught short is that you failed to plan, a banker is not going to be very interested in helping you out.

If you assume from the beginning that you will someday be short on cash, you can arrange for a line of credit at your bank. This allows you to borrow money up to a preset limit any time you need it. Since it's far easier to borrow when you don't need it, arranging a credit line before you are short is vital.

If bankers won't help, turn next to your suppliers. These people are more interested in keeping you going than a banker, and they probably know more about your business. You can often get extended terms from suppliers that amount to a hefty, low-cost loan just by asking. That's especially true if you've been a good customer in the past and kept them informed about your financial situation.

Consider using factors. These are financial service businesses that can pay you today for receivables you may not otherwise be able to collect on for weeks or months. You'll receive as much as 15 percent less than you would otherwise, since factors demand a discount, but you'll eliminate the hassle of collecting and be able to fund current operations without borrowing.

Ask your best customers to accelerate payments. Explain the situation and, if necessary, offer a discount of a percentage point or two off the bill. You should also go after your worst customers—those whose invoices are more than 90 days past due. Offer them a steeper discount if they pay today.

You may be able to raise cash by selling and leasing back assets such as machinery, equipment, computers, phone systems and even office furniture. Leasing companies may be willing to perform the transactions. It's not cheap, however, and you could lose your assets if you miss lease payments.

Choose the bills you'll pay carefully. Don't just pay the smallest ones and let the rest slide. Make payroll first—unpaid employees will soon be ex-employees. Pay crucial suppliers next. Ask the rest if you can skip a payment or make a partial payment.

The Projected Cash Flow Statement

A projected cash flow statement is used to evaluate cash inflows and outflows to determine when, how much, and for how long cash deficits or surpluses will exist for a farm business during an upcoming time period. That information can then be used to justify loan requests, determine repayment schedules, and plan for short-term investments. A projected cash flow statement is best defined as a listing of expected cash inflows and outflows for an upcoming period (usually a year). Anticipated cash transactions are entered for the sub period they are expected to occur. The length of the sub period depends upon whether a monthly or quarterly cash flow statement is used. The word cash is crucial in this definition, because only cash items are included in a cash flow statement.

Cash inflows include cash operating and capital receipts and can include nonfarm as well as farm revenues. Cash outflows usually include such things as farm operating and capital outlays, family living expenses, and loan payments. However, if the farming operation is completely separate from the family, living expenses would not be included in the cash flow statement for the farming operation. An example of such an arrangement would be a farm that is incorporated and pays salaries to family members. Also included in the list of cash outlays are debt repayment commitments, both principal and interest.

What information is provided?

Operating expenses are usually not paid evenly over the course of a year for many farm enterprises. Also, marketing patterns for many farm products are not evenly distributed throughout the year. Therefore, revenues usually do not flow into the business, and expenses do not flow out of the business on an equal and regular basis during the year. This results in periods of cash deficits and surpluses.

Knowledge of the amounts of cash deficits and surpluses and the timing and duration of each aids tremendously

in setting up a line of credit with a lender. The projected cash flow statement clearly identifies when loan funds will be needed and when the lender can expect to be repaid. This information is extremely useful in justifying loan requests, especially during financially stressful times.

In addition, a projected cash flow statement enables the user to identify the amount and duration of cash surpluses, which is useful when deciding among the various short-term deposit instruments currently available to the investor.

Of course, the accuracy of the information provided by a projected cash flow statement depends upon the accuracy of revenue and expense projections, the detail included in the cash flow statement, and whether the statement is prepared for quarters, months, or even weeks. Even though it may lack accuracy because of being an estimate, a projected cash flow statement does provide a projection of expected cash deficits and surpluses, which can be updated as the year progresses.

How is the statement organized?

Perhaps the best way to understand how a projected cash flow statement is organized is to think in terms of a calendar, with the columns representing the sub periods for the planning period used in the projection. Usually the planning period is one year, but the sub periods can be as detailed as you desire. The sub periods can represent quarters, months, and even weeks.

The rows represent various categories for the beginning cash balance, cash receipts, cash expenses, borrowing, saving, and the ending cash balance. Of course, the beginning cash balance for each sub period is the ending cash balance for the previous sub period.

A detailed discussion pertaining to cash available, cash required and the cash position have been explained with the help of exhibit 2.

Exhibit 2
Projected Cash Flow Statement

Entry	Quarter	Quarter	Quarter	Quarter	Projected Totals
1. Beginning cash balance (all readily available funds)					
Operating receipts :	xx	xx	xx	xx	xx
2. Grain and feed					
3. Livestock and poultry					
4. Custom work					
5.					
Capital receipts:	xx	xx	xx	xx	xx
6. Breeding stock					
7. Machinery and equipment					
8.					
Nonfarm income:	xx	xx	xx	xx	xx
9. Off-farm wages					
10. Total cash available					

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(add lines 1 thru 9)

Operating expenses:

XX XX XX XX XX

11. Fertilizer and lime

12. Seed and chemicals

13. Machine operation and drying

14.

15. Total cash operating expenses (add lines 11 thru 14)

Livestock and feed purchases:

XX XX XX XX XX

16. Feeder livestock

17.

Capital expenditures:

XX XX XX XX XX

18. Machinery and equipment

19.

Other expenses:

XX XX XX XX XX

20. Family living

21. Intermediate and long-term loan payments (principal)

22. (interest)

23. Total cash required (add lines 15 thru 22)

24. Cash available less cash required (line 10 minus line 23)

25. Inflows from savings (principal)

26. (interest)

27. Cash position before borrowing and after savings

28. Money to be borrowed:

(Operating loans)

(Intermediate and long-term loans)

29. Oper. loan payments (principal)

(interest)

30. Outflows to savings

31. Ending cash balance

Loan balances (at end of period):

XX XX XX XX XX

32. Current year's oper. loans

33. Previous year's oper. loans

34. Intermediate and long-term loans _____

35. Total loans _____

Source: <https://www.extension.purdue.edu/extmedia/EC/EC-616.html>

Cash Available

The first line of any cash flow statement is usually the beginning cash balance for the period. That balance includes all readily available funds (i.e., checking accounts, cash, mutual funds with checkwriting privileges, or arrangements for transferring funds to a checking account, etc.).

The next section is the receipt section, which is divided into three subsections: operating receipts, capital receipts, and nonfarm income. Operating receipts (lines 2-5) include receipts from crops, livestock, custom work, government payments, hedging account withdrawals, and any other cash receipts to the farm business. Each projected cash receipt is entered in the quarter that the cash is expected. It is usually a good idea to include several blank lines throughout the form (line 5 for example), so that the statement can be tailored to meet your needs.

Capital receipts (lines 6-8) are cash inflows from the sale of capital items, such as breeding livestock, machinery, and equipment. Also, only the amount of cash expected to flow into the operation is entered. If farmer A expects to trade a boar to farmer B and receive \$50 in cash plus his new boar, only the \$50 is entered in farmer A's projected cash flow statement. That amount is entered in the quarter that the cash is expected.

Nonfarm income includes off-farm wages (line 9) and cash received from interest payments, dividends, and other nonfarm sources. The total cash available for the quarter (line 10) is then calculated by adding the beginning cash balance, operating receipts, capital receipts, and nonfarm income.

Cash Required

The expense section is divided into four subsections: operating expenses, livestock and feed purchases, capital expenditures, and other expenses. Operating expenses (lines 11-14) include such things as seed, fertilizer, breeding expenses, real estate and property taxes, insurance, utilities, and veterinary. The amount for each item is entered in the quarter when it is expected to be paid, which may be different from when you actually take possession of the item.

The next subsection is labelled livestock and feed purchases (lines 16 and 17) and includes cash expenses for feeder livestock as well as for purchasing breeding livestock. Also included are cash outlays for feed.

The third subsection is labelled capital expenditures (lines 18 and 19) and includes cash outlays to purchase machinery, equipment, buildings, and improvements. If the dealer is to be paid in full and you borrow the money from another lender (i.e., commercial bank, PCA, etc.), the entire amount to be paid is entered in the appropriate quarter. The cash flowing into the operation from the loan will be discussed later.

Other expenses (lines 20-22) can include hedging account deposits, gross family living withdrawals, nonfarm business expenditures, and income tax and social security payments. Also included in this section are principal and interest payments due for intermediate and long-term loans. The total cash required for the quarter (line 23) is calculated by adding all expenses projected for the quarter.

The Cash Position

Subtracting total cash required (line 23) from total cash available (line 10) yields the cash position before borrowing and inflows from savings. If the cash position is negative or below a specified amount, you can transfer any money available in savings to the checking account (lines 25 and 26).

If the cash position before borrowing and after savings (line 27), is still negative or below some specified

amount, you must borrow those funds needed to satisfy the deficit and/or maintain the minimum amount desired in the checking account. Line 28 provides a place to enter operating, intermediate, and long-term borrowing.

A line is also needed to schedule principal and interest payments for operating loans (line 29), which lenders usually require to be repaid during the upcoming 12 months from the proceeds of the enterprises financed. For example, if operating funds are borrowed in the spring to plant the corn crop, those funds are usually scheduled to be repaid when the corn is expected to be sold. Of course, if the corn is stored and expected to be sold the next year, then the payment should be scheduled the next year.

Two additional lines are needed to account for any cash remaining at the end of the period (lines 30 and 31). First, when the amount of cash is greater than the minimum balance desired, the excess will likely be invested in a short-term security, money market fund, etc. Therefore, a line is needed to account for funds flowing out of the farm business and into some type of savings or short-term investment (line 30). This line is necessary since that amount of cash will not be available for use by the farm business until either the security matures or until the funds are withdrawn by the operator. Line 31 is the ending cash balance for the quarter. This is also the beginning cash balance for the next quarter.

The cash position for each quarter is then calculated sequentially as described above, until the ending cash balance for the last quarter is calculated. That amount then becomes the beginning cash balance for the first quarter of the next year's projected cash flow statement.

The last four lines (32-35) enable the borrower to keep a running total of the various loan balances. The lines are labelled to distinguish between current year operating loans (line 32) and operating loans remaining from a previous period (line 33). This information is extremely useful when applying for a line of credit from a lender, because the lender needs to know the maximum amount expected to be outstanding as well as amounts expected to be outstanding throughout the year. The balances for each period are increased or decreased as funds are disbursed and payments are made.

Intermediate and long-term loan balances are on a separate line (line 34) and can be increased or decreased as additional funds are borrowed or payments made. The total loan balance outstanding each period can then be calculated by summing the loan balances outstanding for each type of loan and recording the total on line 35.

To explain how a projected cash flow statement is prepared, the following example is used to describe the anticipated cash transactions for a hypothetical farm operator, Fred Farmer. The information describing this farming operation is presented in handout 2. To understand the mechanics of completing a projected cash flow statement, the example will be used first to complete an annual projected cash flow statement. Therefore, the information from handout exhibit 2 will be entered in the column labelled Projected Totals.

In this simple example, transfer the information contained in exhibit 3 to the projected total column for your projected cash flow statement (exhibit 2). To check yourself refer to Exhibit 4, as the transactions are discussed in the following paragraphs.

Exhibit 3

Projected Cash Flow Statement

Cash transactions expected during the upcoming 12-month period:

1. The cash balance on January 1 is \$2,500. (Line 1).
2. Corn to be sold during the upcoming year should generate \$26,250. (Line 2).
3. Off-farm wages for the upcoming year are expected to equal \$20,000. (Line 9).
4. Operating expenses of \$12,500 are expected for the upcoming year. (Line 15).
5. A new piece of machinery costing \$6,000 will likely be purchased; \$5,000 will be borrowed from the

local bank. (Line 18).

6. Family living expenses of \$16,000 are expected during the upcoming year. (Line 20).
7. Intermediate and long-term principal payments on loans are expected to equal \$11,000, with another \$12,250 due in interest. (Lines 21 and 22).
8. The farmer has a money market fund for emergencies that currently has a balance of \$5,000. This money will be used before additional money is borrowed.

Source: <https://www.extension.purdue.edu/extmedia/EC/EC-616.html>

On January 1, there is \$2,500 in cash, or in the checking or negotiable order withdrawal account, or perhaps in a money market fund with check writing provisions. Remember, this balance is the amount at the end of the previous year. It is entered on line 1.

Next, expect \$46,250 to flow into the operation during the upcoming period. This is found by adding the \$26,250 from the sale of crops (line 2) to the amount of money flowing into the operation from an off-farm job, \$20,000 (line 9). Thus, the total cash available is \$48,750 (line 10).

Also, expect \$57,750 to flow out of the operation during the upcoming year. This is found by adding operating expenses of \$12,500 (line 15), capital expenditures of \$6,000 (line 18), family living of \$16,000 (line 20), and intermediate and long-term loan payments of \$23,250; \$11,000 in principal (line 21) and \$12,250 in interest (line 22).

The cash position at the end of the year would be minus \$9,000 (line 24), which is not a desirable way to end the year. At this time Fred must think about ways to obtain some additional cash. This can be accomplished by increasing cash available, reducing cash required, bringing in savings, or borrowing.

Line no.	Projected	Item totals
1.	Beginning cash balance	\$ 2,500
2.	Grain and feed	26,250
9.	Off-farm wages	20,000
10.	Total cash available -----	\$48,750
15.	Total cash operating expenses	\$12,500
18.	Machinery and equipment	6,000
20.	Family living	16,000
21.	Inter. and long-term loan payment (principal)	11,000
22.	Inter. and long-term loan payment (interest)	12,250
23.	. Total cash required -----	\$57,750
24.	Cash available less cash required -	\$9,000
25.	Inflows from savings (principal)	5,000
27.	Cash position before borrowing and after savings	-\$4,000
28.	Money to be borrowed (intermediate and long-term)	5,000

31.	Ending cash balance	\$1,000

WORKING CAPITAL MANAGEMENT THROUGH BUSINESS MODELLING

Working capital is one of the toughest concepts for the entrepreneurs to comprehend, especially, for the owners of small business. In fact, the term means a lot of different things to a lot of different people. By definition, working capital is the amount by which current assets exceed current liabilities.

There are various approaches to estimate the working capital requirements. However, one of the useful tools for ascertaining working capital needs is the operating cycle. The operating cycle analyzes the accounts receivable, inventory and accounts payable cycles in terms of days. In other words, accounts receivable are analyzed by the average number of days it takes to collect an account. Inventory is analyzed by the average number of days it takes to turn over the sale of a product. Accounts payable are analyzed by the average number of days it takes to pay a supplier invoice.

Most businesses cannot finance the operating cycle (accounts receivable days + inventory days) with accounts payable financing alone. Consequently, working capital financing is needed. This shortfall is typically covered by the net profits generated internally or by externally borrowed funds or by a combination of the two.

Most businesses need short-term working capital at some point in their operations. For instance, retailers must find working capital to fund seasonal inventory build-up between September and November for Christmas sales. But even a business that is not seasonal occasionally experiences peak months when orders are unusually high. This creates a need for working capital to fund the resulting inventory and accounts receivable build-up.

The other methods for estimating working capital requirements are as follows:

i) *Percentage of Sales Method*: This method of estimating working capital requirements is based on the assumption that the level of working capital for any firm is directly related to its sales value. If past experience indicates a stable relationship between the amount of sales and working capital, then this basis may be used to determine the requirements of working capital for future period.

Thus, if sales for the year 2007 amounted to Rs 30,00,000 and working capital required was Rs 6,00,000; the requirement of working capital for the year 2008 on an estimated sales of Rs 40,00,000 shall be Rs 8,00,000; i.e. 20% of Rs 40,00,000.

The individual items of current assets and current liabilities can also be estimated on the basis of the past experience as a percentage of sales. This method is simple to understand and easy to operate but it cannot be applied in all cases because the direct relationship between sales and working capital may not be established.

ii) *Regression Analysis Method (Average Relationship between Sales and Working Capital)*: This method of forecasting working capital requirements is based upon the statistical technique of estimating or predicting the unknown value of a dependent variable from the known value of an independent variable. It is the measure of the average relationship between two or more variables, i.e., sales and working capital, in terms of the original units of the data.

The relationships between sales and working capital are represented by the equation:

$$y = a + bx$$

Where, y = Working capital (dependent variable)

a = Intercept of the least square

b = Slope of the regression line

x = Sales (independent variable)

For determining the values 'a' and 'b' two normal equations are used which can be solved simultaneously :

$$\begin{aligned}\sum y &= na + b\sum x \\ \sum xy &= a\sum x + b\sum x^2\end{aligned}$$

iii) *Cash Forecasting Method*: This method of estimating working capital requirements involves forecasting of cash receipts and disbursements during a future period of time. Cash forecast will include all possible sources from which cash will be received and the channels in which payments are to be made so that a consolidated cash position is determined.

This method is similar to the preparation of a cash budget. The excess of receipts over payments represents surplus of cash and the excess of payments over receipts causes deficit of cash or the amount of working capital required.

iv) *Projected Balance Sheet Method*: Under this method, projected balance sheet for future date is prepared by forecasting of assets and liabilities by following any of the methods stated above. The excess of estimated total current assets over estimated current liabilities, as shown in the projected balance sheet, is computed to indicate the estimated amount of working capital required.

Comprehending Net Working Capital

In simple terms, net working capital (NWC) denotes the short terms liquidity of a company. We can calculate NWC simply by adding the current assets and deducting the current liabilities.

Net Working Capital = Total Current Assets - Total Current Liabilities

The concept of Net Working capital can be understood from the following example:

Tully Company has the following information –

Particulars	Amount
Sundry Creditors	\$45,000
Sundry Debtors	\$55,000
Inventories	\$40,000
Prepaid salaries	\$15,000
Outstanding advertisements	\$5000

Total current assets = (Sundry Debtors + Inventories + Prepaid salaries) = (\$55,000 + \$40,000 – \$15,000) = \$110,000.

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Total current liabilities = (Sundry Creditors + Outstanding advertisements) = (\$45,000 + \$5000) = \$50,000.

- Therefore, the Net Working Capital (NWC) = Total Current Assets – Total Current Liabilities = \$110,000 – \$50,000 = \$60,000.

The following screenshot helps in comprehending the computation of Net Working Capital through MS-Excel.

	A	B	C	D	E	F	G	H
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32								

Source: <https://www.wallstreetmojo.com/net-working-capital/>

Coding in the Spreadsheet

The following example shows how to code the effects of working capital in models. They assume that the business earns revenues evenly through a year and there are no seasonal effects.

One continuous example is used to illustrate each item of working capital. A wholesale business sets up and achieves sales in year 1 of \$1,200,000 created as *Input_initial_sales* on the input sheet. Sales grow at \$120,000 a year, created as *Input_annual_sales_increase* on the input sheet, for four years. The business ceases at the end of the fourth year.

Debtors / receivables: The impact of debtors in a business is a time delay between a sale and the receipt of cash. Taking the example and focusing on debtors, assume customers take an average of two months to pay their invoices. This is created as *Input_debtor_period* on the input sheet and set 2. *Input_year_length* is set up as 12 (representing 12 months).

Exhibit 4

The Financial Impact of Debtors

	A	B	C	D	E	F	G	H	I	J	K
1	Model Title										
2											
3	Year number	Year_number			0	1	2	3	4	5	Total
4	Years	Actual_years			2004	2005	2006	2007	2008	2009	
5											
6	Profit and Loss										
7	Sales	Output_sales			0	1,200	1,320	1,440	1,560	0	5,520
8											
9	Balance Sheet										
10	Debtors	Output_debtors			0	200	220	240	260	0	
11											
12	Cash flow	Output_receipts			0	1,000	1,300	1,420	1,540	260	5,520

In the above example, it has been assumed that there are no bad debts and that all customers pay on the due date. The total recognized in the profit and loss account equals the total recognized in the cash flow. Because of the timing difference caused by debtors an extra year in the model is required, year 5, to collect the debtors left at the end of year 4. Some companies use a 10-year plan for all models of investment evaluations but show an 11th year to sweep up items such as working capital and tax creditors.

The calculations in year 3 of the example are shown in exhibit 5.

Exhibit 5

Code for Calculating the Financial Impact of Debtors

Row	Calculation	Actual calculation	Answer
Sales	=Last_year + Input_annual_sales_increase	=1320 + 120	1,440

Debtors	=Output_sales * (Input_debtor_period / Input_year_length)	=1400 * (2 / 12)	240
Receipts	=G10 + Output_sales – Output_debtors	=220 +1440 -240	1,420

Stock / inventory: Holding stock will tie up cash until it can be sold and the cash collated from customers. Using the measure of stock days will ensure that the stock levels are kept in line with sales. In building a dynamic model, stock days are best driven by sales to ensure the business model does not become production oriented.

Using the above example, assume the company charges a 20% mark-up on bought-in goods, set up as an input for *Input_mark_up*, and stock levels need to be enough for three months' sales, set up as an input for *Input_stock_period* of 3.

Exhibit 6

The Financial Impact of Stock

	A	B	C	D	E	F	G	H	I
1	Model Title								
2									
3	Year number	Year_number			0	1	2	3	4
4	Years	Actual_years			2004	2005	2006	2007	2008
5									
6	Profit and Loss								
7	Sales	Output_sales			0	1,200	1,320	1,440	1,560
8	Cost of sales	Output_cost_of_sales			0	1,000	1,100	1,200	1,300
9	Gross profit				0	200	220	240	260
10									
11	Stock working								
12	Stock b/fwd				0	250	275	300	325
13	Stock sold				0	1,000	1,100	1,200	1,300
14	Stock c/fwd				250	275	300	325	0
15	Stock bought				250	1,025	1,125	1,225	975

In the above solution, it is assumed that:

7	Stock working	Output_sales			0	1,200	1,320	1,440	1,560	0
8	Stock bought	Output_stock_bought			250	1,025	1,125	1,225	975	4,600
9										
10	Balance sheet									
11	Creditors	Output_creditors			250	85	94	102	0	
12					0	1,000	1,300	1,420	1,540	260
13	Cash flow									
	Payments				0	1,190	1,116	1,217	1,077	4,600

In the above example it has been assumed that a bulk delivery of stock at year 0 ready to start the business. This will be paid for in year 1. In the final year there will be no creditors as the business is unlikely to continue buying stock in the last month of existence.

The calculations in year 3 are shown in exhibit 9

Exhibit 9

Code for Calculating the Financial Impact of Creditors

Row	Calculation	Actual calculation	Answer
Stock bought	As stock example		1,225
Creditors	=Output_stock_bought* (Input_creditor_period / Input_year_length)	= 1225 * (1 /12)	102
Payments	= G11 + Output_stock_bought - Output_creditors	=94 + 1225 -102	1,217

To achieve the effects in year 0 and the final year, use IF statements to identify for which year of the model the calculation is being performed. In year 0 the creditor should equal the stock bought. In the final year the creditor should equal zero.

Creditors can also arise from overhead and fixed asset purchases. Only include this level of detail if the purchases of these items are significant, such as a 10% retention held on property construction.

DETERMINATION OF MAXIMUM FINANCE REQUIRED THROUGH EXCEL

In this section, the procedure of computing how much a business can borrow using MS-Excel has been explained. It is to be noted that how much a business can borrow is often determined by the bank based on internal qualifiers, such as credit score, debt-to-income ratio, interest rate and the type of loan you need. These qualifiers will vary between banks and may not be publicized. However, the qualifiers that have the biggest impact is how much one can afford and the interest rate. If a business has assessed its finances and determines how much it can afford to pay each month, then it can compute the maximum amount it can borrow, based on

that monthly payment and a given interest rate. This complex calculation is greatly simplified by using Microsoft Excel's loan formulas.

- 1) *Calculate Annuities Using Excel:* Enter the monthly interest rate, in decimal format, in cell A1. Most interest rates are expressed as annual rates, so enter “=Interest/12” and replace “Interest” with the annual interest rate, such as “=0.06/12”.
- 2) *Front-End Debt Ratio vs. Back-End Debt Ratio:* Enter the number of payments in cell A2. Loans may be expressed in months or years. If you know the number of month for the loan, enter that value. If you know the number of years, enter “=Years12” and replace “Years” with the number of years, such as “=512”.
- 3) *Calculate a Borrowing Base:* Enter the maximum amount you could comfortably afford paying each month in cell A3. This figure should be calculated based on your current budget, while factoring in a margin of safety for unexpected occurrences. As an example, if you take home \$3,000 per month, but have expenses of \$2,000, you can afford \$1,000 per month. However, you might want to put some amount in savings each month. If you decide to save \$500 per month, then your payment can only be \$500.
- 4) *Calculate a Loan's Monthly Payment in Excel With Tax & PMI:* Enter “=PV(A1,A2,A3)” in cell A4 to calculate the maximum amount of the loan. Because this value expresses a debt, it appears red and parenthesized.

SENSITIVITY ANALYSIS

The technique used to determine how independent variable values will impact a particular dependent variable under a given set of assumptions is defined as **sensitive analysis**. It's usage will depend on one or more input variables within the specific boundaries, such as the effect that changes in interest rates will have on a bond's price.

It is also known as the what – if analysis. Sensitivity analysis can be used for any activity or system. All from planning a family vacation with the variables in mind to the decisions at corporate levels can be done through sensitivity analysis.

It helps in analyzing how sensitive the output is, by the changes in one input while keeping the other inputs constant.

Sensitivity analysis works on the simple principle: **Change the model and observe the behaviour.**

The parameters that one needs to note while doing the above are:

- 1) **Experimental Design** : It includes combination of parameters that are to be varied. This includes a check on which and how many parameters need to vary at a given point in time, assigning values (maximum and minimum levels) before the experiment, study the correlations: positive or negative and accordingly assign values for the combination.
- 2) **What to Vary:** The different parameters that can be chosen to vary in the model could be:
 - a) the number of activities
 - b) the objective in relation to the risk assumed and the profits expected
 - c) technical parameters
 - d) number of constraints and its limits
- 3) **What to Observe:** a) the value of the objective as per the strategy
b) value of the decision variables

c) value of the objective function between two strategies adopted

Measurement of sensitivity analysis

Below are mentioned the steps used to conduct sensitivity analysis:

1. Firstly the base case output is defined; say the NPV at a particular base case input value (V1) for which the sensitivity is to be measured. All the other inputs of the model are kept constant.
2. Then the value of the output at a new value of the input (V2) while keeping other inputs constant is calculated.
3. Find the percentage change in the output and the percentage change in the input.
4. The sensitivity is calculated by dividing the percentage change in output by the percentage change in input.

This process of testing sensitivity for another input (say cash flows growth rate) while keeping the rest of inputs constant is repeated till the sensitivity figure for each of the inputs is obtained. The conclusion would be that the higher the sensitivity figure, the more sensitive the output is to any change in that input and vice versa.

Methods of Sensitivity Analysis

There are different methods to carry out the sensitivity analysis:

- Modelling and simulation techniques
- Scenario management tools through Microsoft excel

There are mainly two approaches to analyzing sensitivity:

- a) Local Sensitivity Analysis
- b) Global Sensitivity Analysis

a) *Local Sensitivity Analysis*: Local sensitivity analysis is derivative based (numerical or analytical). The term local indicates that the derivatives are taken at a single point. This method is apt for simple cost functions, but not feasible for complex models, like models with discontinuities do not always have derivatives.

Mathematically, the sensitivity of the cost function with respect to certain parameters is equal to the partial derivative of the cost function with respect to those parameters.

Local sensitivity analysis is a *one-at-a-time* (OAT) technique that analyzes the impact of one parameter on the cost function at a time, keeping the other parameters fixed.

b) *Global Sensitivity Analysis*: Global sensitivity analysis is the second approach to sensitivity analysis, often implemented using Monte Carlo techniques. This approach uses a global set of samples to explore the design space.

The various techniques widely applied include:

- **Differential sensitivity analysis**: It is also referred to the direct method. It involves solving simple partial derivatives to temporal sensitivity analysis. Although this method is computationally efficient, solving equations is intensive task to handle.
- **One at a time sensitivity measures**: It is the most fundamental method with partial differentiation, in which varying parameters values are taken one at a time. It is also called as local analysis as it is an indicator only for the addressed point estimates and not the entire distribution.
- **Factorial Analysis**: It involves the selection of given number of samples for a specific parameter

and then running the model for the combinations. The outcome is then used to carry out parameter sensitivity.

Through the sensitivity index one can calculate the output % difference when one input parameter varies from minimum to maximum value.

- **Correlation analysis** helps in defining the relation between independent and dependent variables.
- **Regression analysis** is a comprehensive method used to get responses for complex models.
- **Subjective sensitivity analysis:** In this method the individual parameters are analyzed. This is a subjective method, simple, qualitative and an easy method to rule out input parameters.

Using Sensitivity Analysis for decision making

One of the key applications of Sensitivity analysis is in the utilization of models by managers and decision-makers. All the content needed for the decision model can be fully utilized only through the repeated application of sensitivity analysis. It helps decision analysts to understand the uncertainties, pros and cons with the limitations and scope of a decision model.

Most if not all decisions are made under uncertainty. It is the optimal solution in decision making for various parameters that are approximations. One approach to come to conclusion is by replacing all the uncertain parameters with expected values and then carry out sensitivity analysis. It would be a breather for a decision maker if he / she has some indication as to how sensitive will the choices be with changes in one or more inputs.

Uses of Sensitivity Analysis

- 1) The key application of sensitivity analysis is to indicate the sensitivity of simulation to uncertainties in the input values of the model.
- 2) They help in decision making.
- 3) Sensitivity analysis is a method for predicting the outcome of a decision if a situation turns out to be different compared to the key predictions.
- 4) It helps in assessing the riskiness of a strategy.
- 5) Helps in identifying how dependent the output is on a particular input value. Analyses if the dependency in turn helps in assessing the risk associated.
- 6) Helps in taking informed and appropriate decisions
- 7) Aids searching for errors in the model.

STRUCTURING AND DESIGNING MODELS – A KEY SUCCESS FACTOR

A business model defines how value gets created and delivered in a company. It is an organized way of laying out assumptions about key resources, partners and activities of your value chain. These include your value proposition, customer relationships, channels, customer segments, cost structures and revenue streams. An exponential business model looks at the same key areas as a traditional business model—but it has radically different goals.

Most business models are linear, designed to increase profits or decrease costs by 10 percent. With an exponential business model, we think in terms of changes that are 10 times greater or lesser than today's value—the common shorthand for this goal is simply "10X."

Exponential Business Models Are Needed Now More Than Ever

Taking your business model from 10 percent to 10X isn't simply about scaling. Often it requires a completely new way of looking at your business and the market it serves.

Exponential business models require exponential imagination. But it can be difficult to re-imagine your existing business if you only surface ideas from within the organization.

Some of the best ideas come from outsiders who offer fresh perspectives on how things are "supposed" to work. To build an exponential business model, try studying other successful and profitable business models, use a common language, make strategic choices, and identify "antilogos" — businesses we don't want to emulate but can learn from.

Further, to 10X your business model, you must create value by leveraging technology in at least one key building block, such as the value proposition, channels, or key resources.

Amazon, Facebook, Airbnb, Snap, Alibaba and Slack are just a handful of the companies that have successfully done so. Airbnb, for example, built a software platform to connect those in need of lodging to those who had it. By combining existing tech with an alternative value proposition, they liberated a huge, underused resource and created 10X value without owning a single room.

The Nine Design Principles for Exponential Transformation

There are nine design principles to guide your efforts. Each of these is tied to one of the boxes on the Business Model Canvas.

1) Customer Segments: Solve a problem for the masses: Technology is enabling organizations to reach entirely new markets in massive and viral ways. As the world's population approaches 7.5 billion, companies and organizations with exponential business models can help close the gap between our growing population and the resources they need. Many companies start with one core offering to customers to serve one need—like Uber and personal transportation—then expand their services to meet other needs, like UberEATS or UberHEALTH.

2) Value Proposition: Information-based services: As companies digitize their products and services, they aren't just creating new versions of their traditional offerings, they're creating entirely new marketplaces. Airbnb's platform re-imagines short-term accommodations; Slack digitizes collaboration and knowledge sharing; the consumer genetics firm 23andMe offers affordable DNA sequencing to anyone. Every business, regardless of industry, should be exploring how and what to digitize in their existing value proposition to not only serve existing customers better, but to potentially open up foundationally new exchanges of value.

3) Relationships: Build a community of fans: When you want to work towards a 10X solution, you need to build your customers into a fan base and then collaborate with these fans. User-empowered customization of basic functions, such as the filters on Instagram, the augmented lenses on Snap and the mashup functionality on Musical.ly allow users to create something unique and share their creations across multiple touch points, acting as a viral distribution and marketing channel.

4) Channels: Multi-modal and Social: Many exponential businesses are using social collaboration to connect physical and multiple digital outlets to enhance the value of their core offering. Think of this as user-generated content amplified through network externalities—the more people that contribute to the platform, the more valuable the service becomes. The fastest-growing companies use this strategy as a driver of customer acquisition, engagement and lifetime value. The traffic app Waze married GPS data with real-time traffic input from users, using gamification methods to make the process fun and engaging. Waze was bought by Google for \$1.3 billion when they had only 100 employees, and it has since become the go-to service for commuters.

5) Key Activities: Ultra scalable processes: Technology can help analyze and automate routine activities to disrupt traditional manufacturing or delivery methods. Amazon has long used robots to stock and retrieve

products from its warehouses and is getting closer to delivering its products via drones. It also realized one of its most important strategic activities—cloud and data storage—could become a valuable resource for others. Amazon Web Services (AWS)—rented access to computing infrastructure—was launched in 2006. Ten years on, it contributed 56 percent of Amazon’s growth and is on target to be a \$100 billion business in less than five years.

6) Key Activities: Lean approach: Why is GE becoming more exponential? They use a lean approach for all core functions in their business, emphasizing rapid cycles of experimentation and learning. By instituting lean processes across your functions, you allow people to take risks, and you gain data about your business that you can study and learn from.

7) Key Activities, Resource and Partners: Algorithm to the core: Google is one of the best examples of a company built on an algorithm (to rank websites), that is then augmented by machine learning. StichFix, one of the fastest-growing on-demand retail companies, has a team of over 65 data scientists and uses algorithms to drive nearly every part of its business. It even has a well-respected public blog on data science (remember, this is a retail company!).

8) Key Resources: Self managed teams: Employees must work in networked ways to socialize and share real-time insights and experiences. Giving employees autonomy to do what they need to in a supportive and open culture decentralizes and speeds up decision-making, opening up the possibility of a 10X business model. Zappos has been one of the early pioneers of building a “holocracy” culture, eliminating professional management positions and empowering workers without additional bureaucracy. Companies like Microsoft are betting long on social software to support spontaneous collaboration efforts, building networking and social functionality into all of their new office suites.

9) Partners: Build uncommon relationships: Many exponential business models stem from “uncommon partners”—different types of companies from different industries that work together to benefit from integrated value. Drone company Matternet and Mercedes-Benz recently joined forces to create an integrated delivery solution designed to transform how people receive lightweight goods on demand.

Concluding the above discussion it can be said that business leaders of business model innovation need to embrace uncertainty, come to the work with a sense of curiosity and patience, and take the time to unpack the learning from what they are seeing around them.

SUMMARY

Revenues: Cash flows and their timings and relevant drivers- Forecasting Revenue; Approaches to Revenue Forecasting- Extrapolation techniques; Causative techniques; Judgmental techniques.

The Projected Cash Flow Statement- What information is provided?; How is the statement organized?

Working Capital Management- Methods for estimating working capital: Percentage of Sales Method; Regression Analysis Method (Average Relationship between Sales and Working Capital); Cash Forecasting Method and Projected Balance Sheet Method;

Net Working Capital = Total Current Assets - Total Current Liabilities

Determination of Maximum Finance Required through Excel- Calculate Annuities Using Excel; Front-End Debt Ratio vs. Back-End Debt Ratio; Calculate a Borrowing Base; Calculate a Loan’s Monthly Payment in Excel With Tax & PMI

Sensitivity Analysis- The technique used to determine how independent variable values will impact a particular dependent variable under a given set of assumptions is defined as **sensitive analysis**. It’s usage will depend on one or more input variables within the specific boundaries, such as the effect that changes in interest rates will have on a bond’s price.

It is also known as the what – if analysis. Sensitivity analysis can be used for any activity or system. All from planning a family vacation with the variables in mind to the decisions at corporate levels can be done through sensitivity analysis.

It helps in analyzing how sensitive the output is, by the changes in one input while keeping the other inputs constant.

SELF TEST QUESTIONS

1. Select any company listed either at BSE Ltd. / NSE Ltd. and do the codification on the spreadsheet to ascertain the financial impact of debtors and stock.
2. Select any two companies listed either at BSE Ltd. / NSE Ltd. from two different sectors and carry out a Sensitivity Analysis.

LIST OF FURTHER READINGS

- 1) Data Analysis and Business Modelling using Microsoft Excel by Manohar Hansa Lysander. Publisher- PHI.
- 2) Business Process Modelling, Simulation and Design. Published by Pearson.

REFERENCES

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- 7) "Net Working Capital Formula | Calculator (with Excel template)", Accessed from <https://www.wallstreetmojo.com/net-working-capital/>
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- 10) "How to design exponential (10x) business models?", Accessed from <https://www.businessmodelsinc.com/how-to-design-exponential-business-models/>
- 11) Guide to Business Modelling by John Tennent and Graham Friend. Published by The Economist.

**PROFESSIONAL PROGRAMME
VALUATIONS & BUSINESS MODELLING**

PP-V&BM

TEST PAPER

A Guide to CS Students

To enable the students in achieving their goal to become successful professionals, Institute has prepared a booklet "A Guide to CS Students" providing the subject specific guidance on different papers and subjects contained in the ICSI curriculum. The booklet is available on ICSI website and students may download from <http://www.icsi.edu/Portals/0/AGUIDETOCSSSTUDENTS.pdf>

WARNING

It is brought to the notice of all students that use of any malpractice in Examination is misconduct as provided in the explanation to Regulation 27 and accordingly the registration of such students is liable to be cancelled or terminated. The text of regulation 27 is reproduced below for information:

"27. Suspension and cancellation of examination results or registration.

In the event of any misconduct by a registered student or a candidate enrolled for any examination conducted by the Institute, the Council or the Committee concerned may suo motu or on receipt of a complaint, if it is satisfied that, the misconduct is proved after such investigation as it may deem necessary and after giving such student or candidate an opportunity to state his case, suspend or debar the person from appearing in any one or more examinations, cancel his examination result, or studentship registration, or debar him from future registration as a student, as the case may be.

Explanation – Misconduct for the purpose of this regulation shall mean and include behaviour in a disorderly manner in relation to the Institute or in or near an Examination premises/centre, breach of any regulation, condition, guideline or direction laid down by the Institute, malpractices with regard to postal or oral tuition or resorting to or attempting to resort to unfair means in connection with the writing of any examination conducted by the Institute".

PROFESSIONAL PROGRAMME VALUATIONS & BUSINESS MODELLING

PP- V & BM

Open Book Examination in Elective Subjects (Paper- 9) in Module-3 of Professional Programme (New Syllabus) Examination

Professional Programme (New Syllabus) offers eight elective papers in Module-3, as mentioned herein below, out of which a student has to opt only one paper to study and qualify that suits his aptitude, interest, ability and career goal:

1. Banking – Law & Practice
2. Insurance– Law & Practice
3. Intellectual Property Rights– Laws and Practices
4. Forensic Audit
5. Direct Tax Law & Practice
6. Labour Laws & Practice
7. Valuations & Business Modelling
8. Insolvency – Law and Practice

There is Open Book Examination (OBE) in all the above eight elective subjects from June 2019 onwards. However, in all other papers / modules of Professional Programme (New Syllabus), students would continue to be examined as per traditional pattern of examination.

This is to inculcate and develop skills of creating thinking, problem solving and decision making amongst students of its Professional Programme and to assess their analytical ability, real understanding of facts and concepts and mastery to apply, rather than to simply recall replicate and reproduce concepts and principles in the examination.

In OBE, the candidates are allowed to consult their study material, class notes, textbooks, Bare Acts and other relevant papers, while attempting answers, as per the requirement of questions. The emphasis throughout is in assessing the students' understanding of the subject, applying their minds, rather than the ability to memorise large texts or rules or law.

Unlike a conventional / typical examination, which assesses how much information candidates have been able to store in their minds, the success in this type of examination depends on the candidate's ability to understand the question, identify inherent issues, application of various techniques, laws, principles, etc. while solving answers with the help of supporting reference material.

Broad pattern of Question Paper for OBE is as follows.

- Each question paper would contain Six questions carrying 100 marks.
- Question No.1 will be of 20 marks based on both theory and practical aspects.
- Question No.2 will be of 15 marks based on practical aspects.
- Question No.3 will be of 15 marks based on practical aspects.
- Question No.4 will be of 20 marks based on both theory and application aspects.

- Question No.5 will be of 15 marks based on practical aspects.
- Question No.6 will be of 15 marks based on both theory and application aspects.

Candidates are not allowed to consult their fellow examinees or exchange their study material / notes etc. with each other in the examination hall.

Candidates are prohibited to bring in any electronic devices, such as laptop, tab, I pad, palmtop, mobile phone, or any other electronic device / gadget at the examination hall / room. However, they are permitted to use their own battery operated noiseless and cordless pocket calculator with not more than six functions, twelve digits and two memories.

PROFESSIONAL PROGRAMME
VALUATIONS & BUSINESS MODELLING – TEST PAPER

[This Test Paper is for recapitulate and practice for the students. Students need not to submit responses/ answers to this test paper to the Institute.]

Time Allowed: 3 Hours

Maximum Marks: 100

Part- 1: Valuations (70 Marks)

Question 1.

- i) "Valuation may be considered a science but, to a large extent, valuation variables require inherent subjectivity". Elucidate the statement
- ii) Explain briefly the purposes of valuation.
- iii) Describe IVS 101: Scope of Work covered under IVS General Standards.
- iv) Office properties are being sold on a yield or income capitalisation basis of 6%. In addition, recent sale prices have been analyzed and also consistently support this rate. Another recent sale of property let at INR 200,000 has just been completed at Rs 20,00,000. The yield on the office property would be.

(5 Marks Each)

Answer all parts of Q. No.2 or 2A

Question 2.

i) The following are Balance Sheets of A Ltd. And B Ltd. as on 31st March, 2018, the date on which the companies were amalgamated and a new company C Ltd. was formed are as follows:

Balance Sheets as on 31st March, 2018

	(INR 000)	(INR 000)
Liabilities		
Equity Share Capital		
Equity Shares of Rs 10 each	7500	5500
Reserves and Surpluses	4000	6000
Current Liabilities	3000	2000
Trade Creditors and other liabilities		
Total	14,500	13,500
Assets		
Non-current Assets	9000	8500

Current Assets	4500	4000
Total	13500	12500

The fixed assets of A Ltd. were valued at INR 10,000 thousand and that of B Ltd. were valued at INR 9,000 thousand. C Ltd. would issue the requisite number of equity shares of INR 10 each at 50% premium to discharge the claim of equity shareholders of A Ltd. and B Ltd. How many shares of C Ltd. would be issued to takeover the business of the two merging companies?

ii) Greenfield limited is intending to acquire Brownfield limited by merger and the following information is available in respect of both the companies:

Particulars	Greenfield Limited	Brownfield Limited
No. of equity shares	6,00,000	3,00,000
Profit after Tax (PAT)	INR 30,00,000	INR 10,00,000
Market Price Per Share	20	15

- Calculate the present EPS of both companies
- Calculate the Exchange Ratio

iii) Compute Enterprise Value from the following information:

The Balance Sheet of Sunrise Limited is as follows:

	INR 000'
Non Current Assets	200
Current Assets:	
Trade Receivables	800
Cash and cash equivalents	800
Total	1800
Shareholders' Funds	1400
Long Term Debt	300
Current Liabilities and Provisions	100
Total	1800

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The shares are actively traded and the current market price is INR 30 per share. Shareholder funds represent 100 shares of INR 10 each and rest is retained earnings.

(5 Marks Each)

OR

Question 2A.

- i) Elucidate the Asset approach of valuation with the help of a suitable example.
- ii) Excel Ltd. needs to get rid of a machine. It expects to sell the asset for INR 10,00,000. It is required to pay brokerage of INR 6000 for facilitating the sale, INR 5000 in legal paperwork costs and INR 2000 to deliver the machine to the buyer. Find out the Net Realisable Value.
- iii) From the following information compute the value of the property as per Cost Approach:
 - a) Value of the property = INR 60,00,000
 - b) New cost of improvements = INR 5,00,000
 - c) Depreciation = INR 6,00,000
- iv) Discuss the following methods of brand valuation with suitable examples;
 - a) Relief from Royalty Method
 - b) Price Premium Method

(5 Marks Each)

Question 3.

- i) Explain the concept of Equity-settled share-based payment transactions concept by providing a suitable example.
- ii) Ettco has agreed to acquire 100% ownership (equity) of Fulton for \$ 100 million. Fulton has \$ 35 million of liabilities outstanding. assume Fulton has 2,500,000 shares of stock outstanding. Fulton's stock is selling for \$ 60.00 per share and the fair market value of Fulton's debt is \$ 40 million.

From the above information compute the following:

- a) Purchase price of the Target Company.
- b) Total Market Value of Fulton.
- iii) The following projections have been made for the year 2019
 - Operating Cash Flow after taxes are estimated as \$ 190,000
 - Interest payments on debt are expected to be \$ 10,000
 - Redemption payments on debt are expected to be \$ 40,000
 - New investments are expected to be \$ 20,000
 - The marginal tax rate is expected to be 30%

Calculate Free Cash Flow from the mentioned information

(5 Marks Each)

Question 4.

i) Provide a brief description of the following forms of values with suitable examples

- a) Book Value
- b) Depreciated Value
- c) Replacement Value
- d) Residual Value
- e) Economic Value

(1 mark each)

ii) Explain the concept of 'Valuation Uncertainty' and briefly describe 'Market Uncertainty' and 'Model Uncertainty'

iii) Explain the procedure involved in sale of 'Distressed Assets'.

iv) Explain any two takeover defence strategies with suitable examples.

(5 Marks Each)

Part-II: Business Modelling (30 Marks)

Answer all parts of Q. No.5 or 5A

Question 5.

i) Elucidate the key components of a business model with rationale.

ii) Explain the following business models with suitable examples.

- a) The Subscription Model
- b) Freemium Model

iii) Elucidate the dynamic and non-dynamic aspects of analysing a business model.

(5 Marks Each)

OR

Question 5A.

i) Considering the features of a sustainable business model analyse the sustainability of E-Commerce companies.

ii) Discuss about Cooperative Business Model by taking the case of steel enterprises in Poland.

iii) Discuss the approaches of Revenue Forecasting

(5 Marks Each)

Question 6.

i) Explain the significance of a Projected Cash Flow Statement.

ii) If the sales for the year 2018 amounted to INR 40,00,000 and working capital required was 8,00,000; the requirement of working capital for the year 2019 on an estimated sales of INR 50,00,000 shall be?

iii) What calculations needs to be done while computing 'Maximum Finance Required' in Excel.

(5 Marks Each)



सत्यं वद धर्मं चर।

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