

Shardul Amarchand Mangaldas

CENTURY *of* EXCELLENCE

Blockchain & Cryptocurrency

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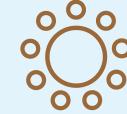
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KEY HIGHLIGHTS

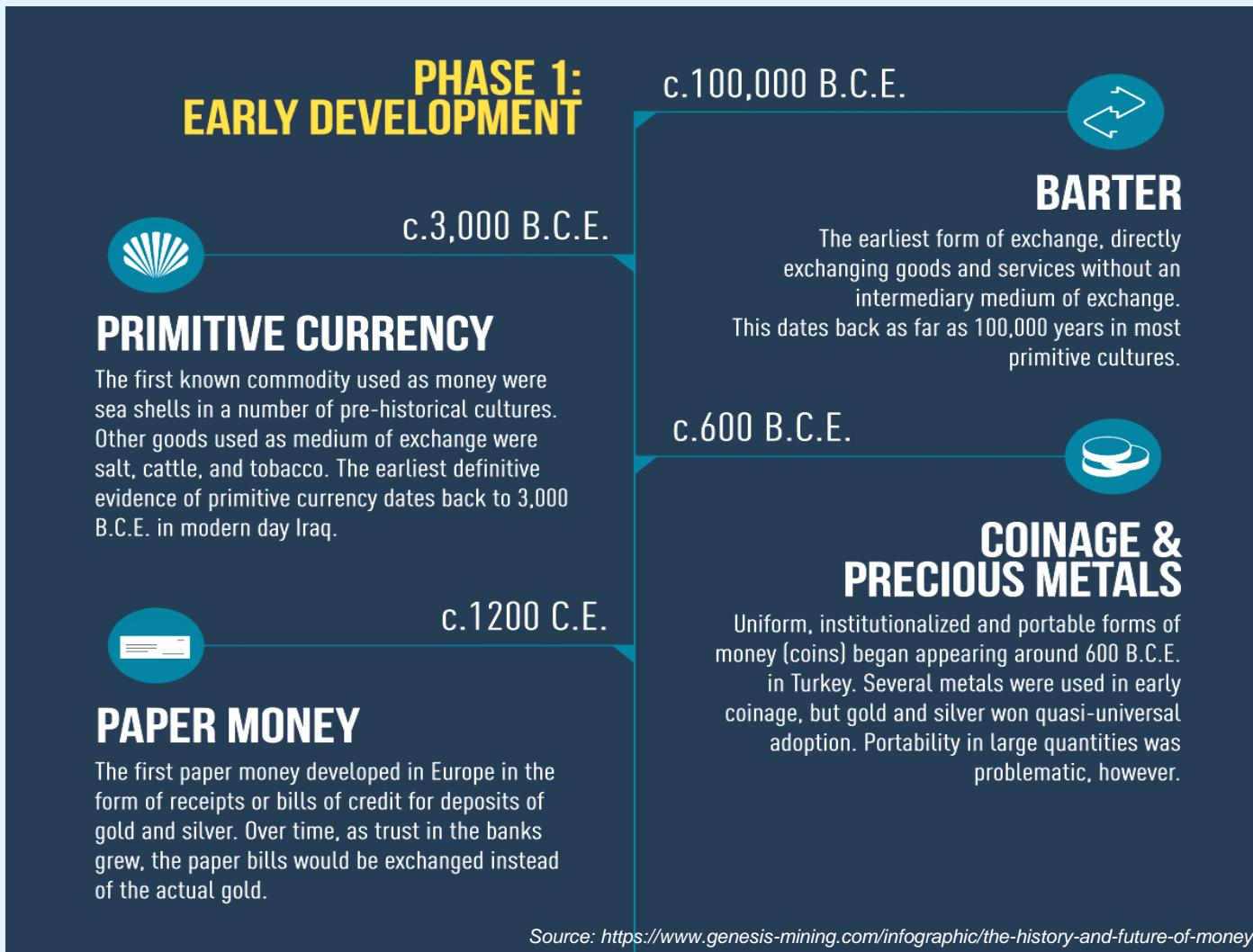
- The History and Economics of Money
 - Pros & Cons of Fiat Money?
- Blockchain & Cryptocurrency
 - What is blockchain?
 - How is it a disruptor?
 - India embraces blockchain.
 - What is cryptocurrency?
 - Scope and types of cryptocurrency.
 - How to acquire bitcoins in India.
 - Regulation – USA and India.
 - Advantages and challenges.

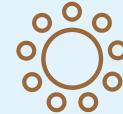


HISTORY & ECONOMICS OF MONEY

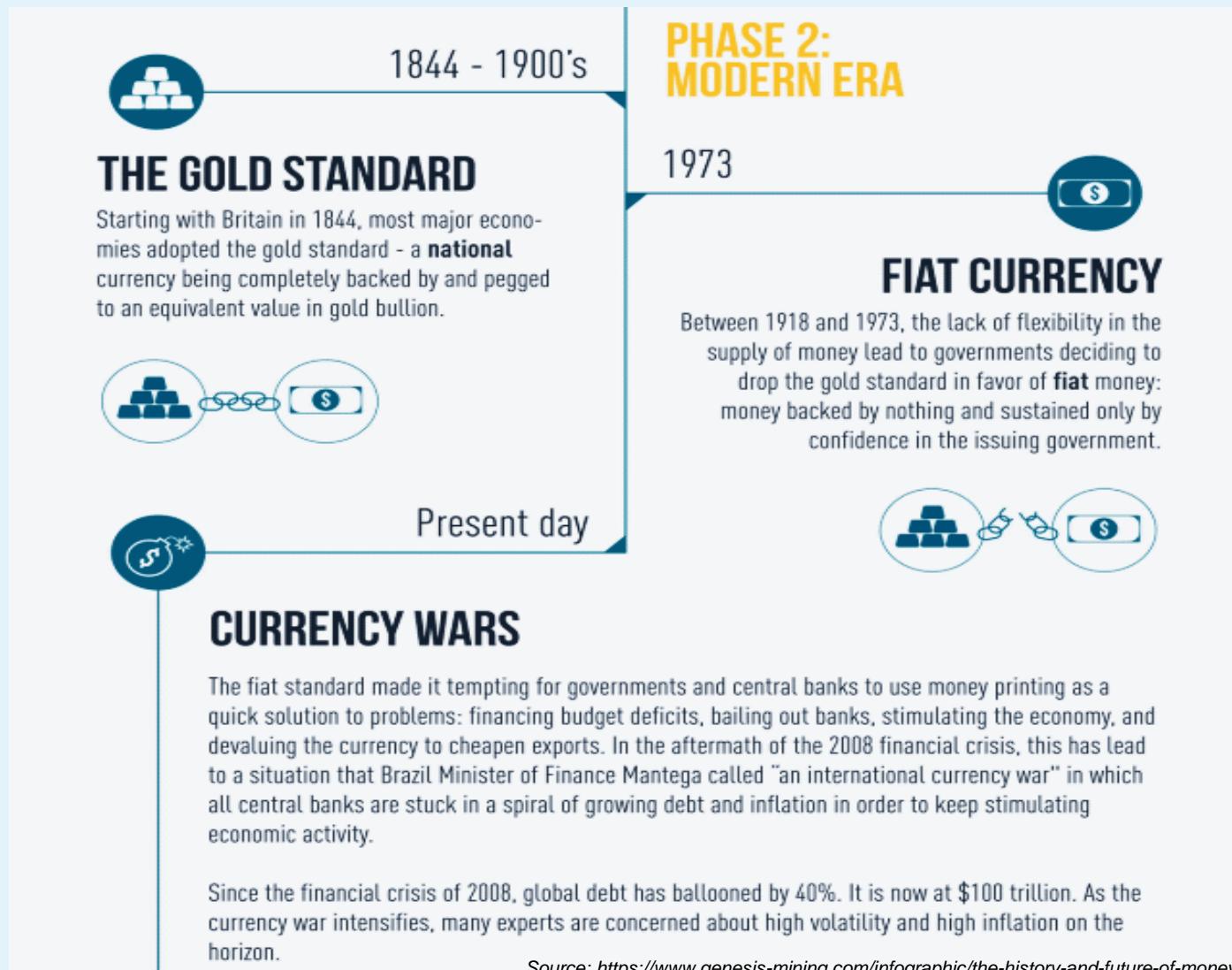


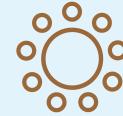
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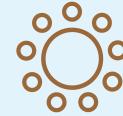
HISTORY & ECONOMICS OF MONEY





PROS & CONS OF FIAT MONEY

- **Advantages**
 - It is an established system.
 - Government issued currency and bank cards are accepted everywhere.
 - Ability to charge your money back in the event of fraud.
 - No requirement for network connection or electricity.
- **Disadvantages**
 - Banking system can be subjected to manipulation, resulting in market crashes.
 - Inflation can erode the value of cash held.
 - Lack of transparency about how the system runs.
 - Bank fees can be expensive, especially for businesses.
 - Banks in different countries often work differently and linking them can be tedious, since different currencies are used.

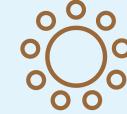


BLOCKCHAIN

- Blockchain is the technology underlying cryptocurrencies. It is a decentralised public ledger that keeps a record of all such transactions that occur across the peer-to-peer network.
- Mining is when users contribute to the network by providing computational power to assist with the verification of transactions in real time.
- With this technology, third party involvement is completely removed. The buyer and seller thus directly interact with each other without any verification by a trusted third-party intermediary.
- All identifying information is encrypted, and no personal information is shared.
- Most importantly, a record of the transaction is created and maintained. The transactions are therefore pseudonymous, not anonymous.



BLOCKCHAIN - THE BIGGEST DISRUPTOR SINCE THE INTERNET



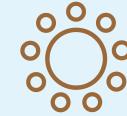
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Blockchain can transform a company's operations by:

- Reducing manual effort by up to 75%
- Providing a single transparent platform that links multiple enterprise resource planning (ERP) systems
- Virtually eliminating complex processes such as disputes, reconciliations, help desks and workflow automation
- Reducing operations costs and overpayments
- Enabling real-time reporting
- Decreasing risks through verifiable and auditable transactions
- Build trust through shared processes and recordkeeping
- Digitally transforming finance functions by integrating with technologies such as artificial intelligence (AI) and Internet of Things (IoT)

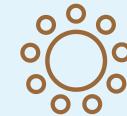
Nasdaq was one of the first multinational financial services companies to begin using the blockchain in a non-currency manner.

Nasdaq sees the blockchain as providing “extensive integrity, audit ability, governance and transfer of ownership capabilities.”



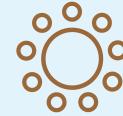
BLOCKCHAIN IN THE INDIAN CONTEXT

- In November 2017, India's largest bank, State Bank of India, announced a consortium "Bankchain", which included 27 banks, IBM, Microsoft, and KPMG. SBI proposed to roll out beta launches of blockchain-enabled smart contracts.
- Several mainstreams banks like ICICI Bank, Kotak Mahindra Bank, YES Bank and Axis Bank have used the technology for international trade finance and vendor financing.
- The National Payments Corporation of India (NPCI) held an "ideathon," and set up a working group, to help it understand the implications of blockchain technology.
- Infosys and TCS are the first large companies to roll out the use of blockchain technology in core banking platforms.



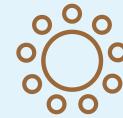
BLOCKCHAIN IN THE INDIAN CONTEXT

- In April 2017, the Department of Economic Affairs, Ministry of Finance, India, sets up the Blockchain and Cryptocurrency Committee to examine the global regulatory and legal structures of digital currencies, including bitcoin.
- PwC's report on "*Redrawing the lines - FinTech's Growing Influence on Financial Services*" in 2017, outlined that
 - According to PwC's DeNovo platform, 32 blockchain firms were founded in India in 2016, as against just 23 in the preceding years.
 - 56% of companies surveyed by the PwC iterate that blockchain is a part of their innovation strategy. However, there are several who are yet to implement it.
 - Most respondents stated that they would most likely use blockchain for funds transfer, digital identity and payments infrastructure.



CRYPTOCURRENCY

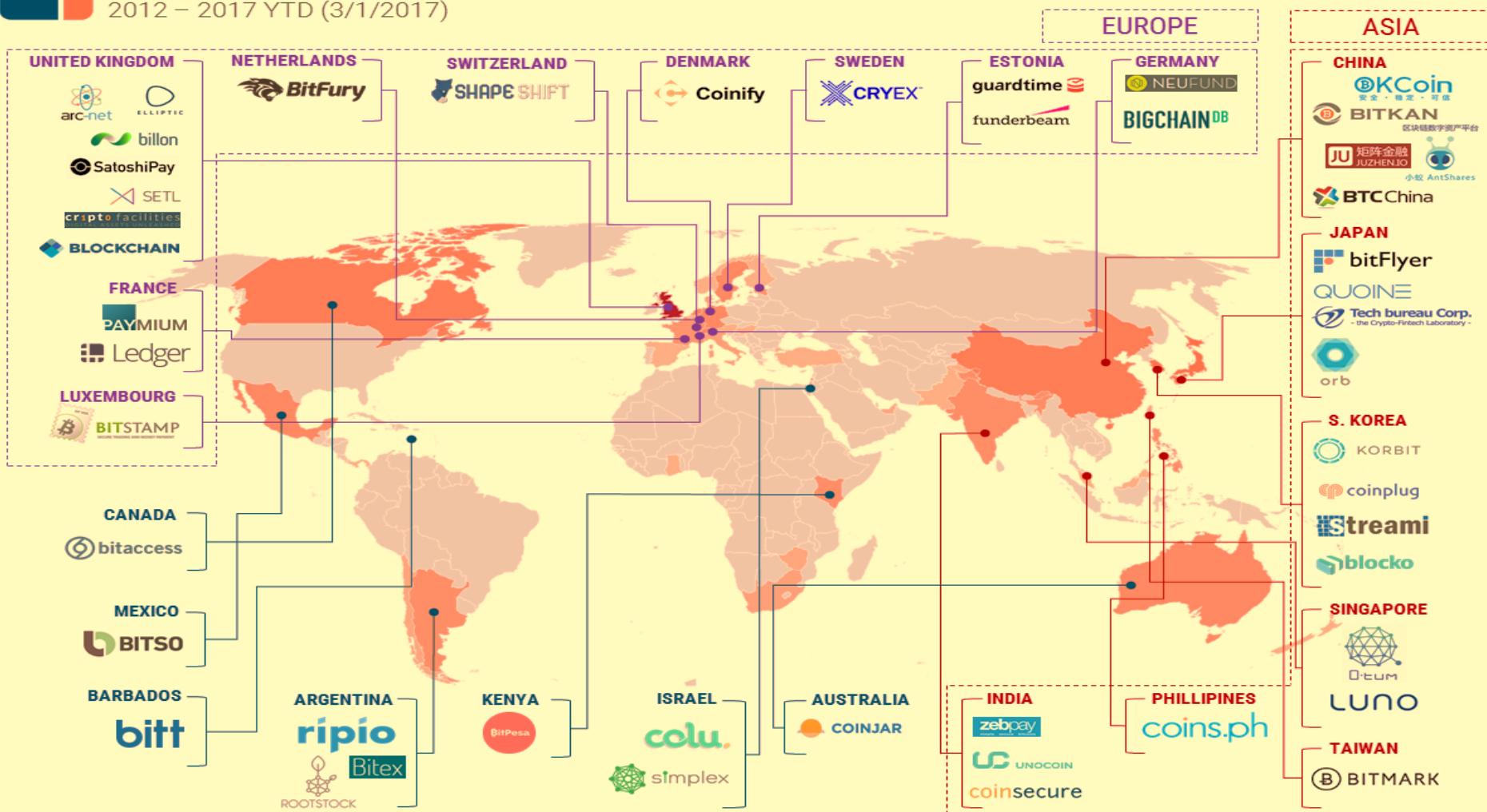
- Cryptocurrency is a medium of exchange but different from the traditional form of currency.
- It is a product of blockchain technology.
- No notes or coins are held physically to show proof of ownership.
 - Not issued by a government or a central authority (E.g.: RBI or any central bank).
 - Not redeemable for another commodity, like gold.
 - Has no intrinsic value.
 - Network is completely decentralized and all transactions are performed by the users of the system.
 - Initially “mined”, but can subsequently be bought, exchanged, awarded or granted.
 - The term ‘cryptocurrency’ is used because the technology is secure from and independent of third parties.

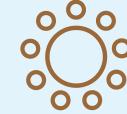


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WORLD TRENDS

GLOBAL BITCOIN & BLOCKCHAIN COMPANIES 2012 – 2017 YTD (3/1/2017)





SCOPE OF CRYPTOCURRENCY

Smart contracts: Creation of protocols which immediately enforce contracts.

Smart property: Automatic trading of property through blockchain.

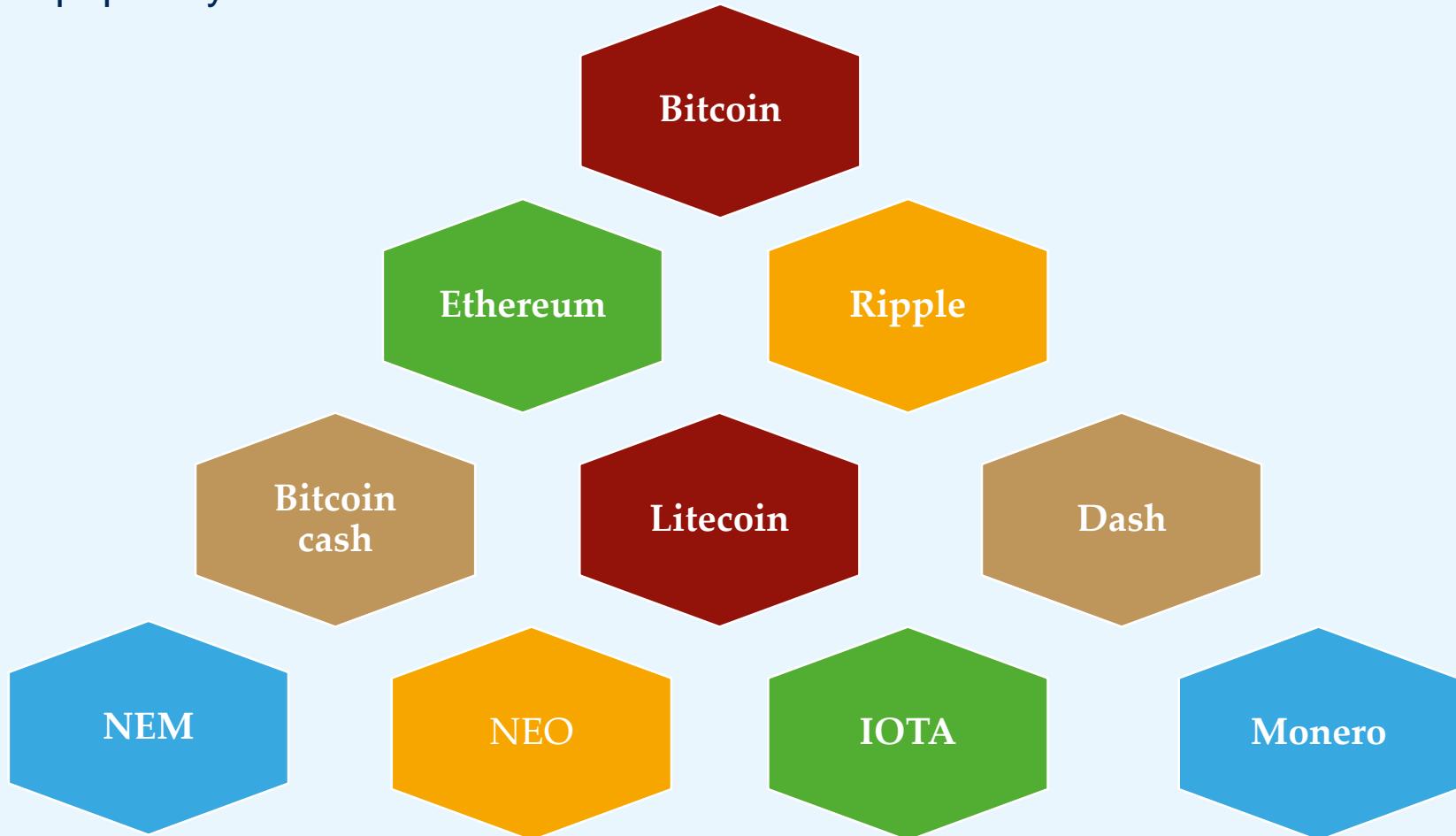
Notary services: Provides proof that a document existed at a specified time or date.

Bonded identity services: Secures identities identified by the blockchain.



TYPES OF CRYPTOCURRENCY

There are about 100 different types of cryptocurrencies. Some of the most popularly traded ones include:

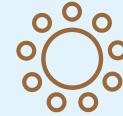




HOW TO ACQUIRE BITCOINS IN INDIA?

One can acquire bitcoins in India in the following ways:

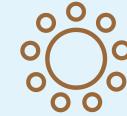
- **Trading - Buy/sell:**
 - Bitcoin can be purchased online and stored in an online wallet in digital form.
 - You can select from various exchanges available in India such as Unicorn, Bitxoxo, Zebpay, Coinbase, etc.
 - Create an account by registering on the selected bitcoin service provider.
 - Once you initiate the request to buy bitcoin, you will be provided with the prevailing rate and the bitcoin can be purchased from the exchange.
- **Mining - setup hardware/cloud:**
 - Download a bitcoin mining software
 - Join a bitcoin mining pool
 - Store the bitcoin
 - Set up a bitcoin wallet



REGULATIONS - USA

In the USA, the Securities and Exchange Commission (SEC), the Commodity Futures Trading Commission (CFTC), Financial Crimes Enforcement Network (Fin CEN), and Financial Stability Oversight Council (FSOC) take charge as regulators of cryptocurrency.

- In July 25, 2017, the SEC issued a Report of investigation under Sec 21(a) of the Securities Exchange Act of 1934 describing an SEC investigation of the Decentralized Autonomous Organizations (DAO), a virtual organization, and its use of distributed ledger or blockchain technology to facilitate the offer and sale of DAO Tokens to raise capital. The Commission applied existing U.S. federal securities laws to this new paradigm, determining that DAO Tokens were securities.
- **The Commission stressed that those who offer and sell securities in the U.S.A are required to comply with federal securities laws, regardless of whether those securities are purchased with virtual currencies or distributed with blockchain technology.**
- **In September 2017, the SEC announced the creation of a cyber unit to combat cyber-related misconduct** and the establishment of a retail strategy task force that will implement initiatives that directly affect retail investors.



REGULATIONS - USA

- The CFTC, which regulates commodities, futures, swaps and currencies, has stated that **Bitcoin and other cryptocurrencies will be treated different than other currencies under the Commodities Exchange Act,1934 since they do not have legal tender status in any jurisdiction**. However, the CFTC has stated that **Bitcoin and other block-chain based virtual currencies are “commodities”** under Section 1a(9) of the Commodities Act and subject to the CFTC.
 - Cryptocurrency fund managers that invest in cryptocurrency future contracts, as opposed to straight cryptocurrencies, are required to register as a Commodity Trading Advisor and Commodity Pool Operator with the CFTC.
 - Cryptocurrency hedge fund managers need to register with the Commodity Futures Trading Commission and National Features Association, pursuant to the Dodd-Frank Act.
- FinCEN, a bureau of the U.S. Department of the Treasury, exercises regulatory functions primarily under the Currency and Financial Transactions Reporting Act of 1970 and other legislations, which legislative framework is commonly referred to as the "Bank Secrecy Act" (BSA).
 - The FinCEN monitors the use and trade of cryptocurrency to combat money laundering and terrorism financing.



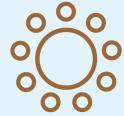
REGULATIONS – INDIA

- The Indian government does not currently regulate cryptocurrency exchanges.
- The Finance Minister, Arun Jaitley, in his budget speech, stated that "*there is a real and heightened risk of investment bubble of the type seen in Ponzi schemes*", referring to cryptocurrencies as the Ponzi scheme.
 - He iterated that measures will be taken to eliminate crypto-assets in financing illegitimate activities.
 - He had also mentioned that the government will explore blockchain technology proactively for ushering in the digital economy.
- In India, a self-regulatory body known as the Digital Assets and Blockchain Foundation India, has been set up to propagate best practices of Digital Asset businesses.
- The Reserve Bank of India has issued warnings to the public about the risks associated with virtual currencies and has suggested it is examining virtual currencies under India's existing legal framework.
- In November 2017, the Indian Supreme Court issued a notice to the RBI and other agencies to respond to a petition made to the SC to regulate bitcoin. The petition requested the Court to make **cryptocurrencies accountable to the exchequer and expressed concerns about the untraceability of digital currency transactions.**



REGULATIONS – UK AND FRANCE

- **U.K. Government Authorization of Blockchain E-Money Startup**
 - In February 2017, the U.K. government granted the blockchain-based finance startup, TramoneX, a small Electronic Money Institution (EMI) registration.
 - The EMI registration is for persons who “issue e-money”, and “e-money” includes *“monetary value represented by a claim on the issuer that is stored electronically, including magnetically”*.
- **French Government Order on Mini-bonds**
 - In April 2016, the French government passed an order legislating rules surrounding ‘mini-bonds,’ a type of corporate debt instrument facilitating crowdfunding. The order explicitly permits the issuance and transfer of mini-bonds using the blockchain, subject to certain adapted procedures and safeguards.
 - The order also contains the first known regulatory definition of the blockchain: a “shared electronic storage device” or *“a shared electronic recording system allowing for authentication.”* As a result of this move, BNP Paribas announced in September 2016 that it would expand its blockchain platform to allow private companies to issue minibonds via crowdfunding platforms.



ADVANTAGES

Access to everyone

Lower fees

Easier in terms of use

Personal data security enabled by public-private cryptography.

Incentives embedded in the network protocol encourages participants.

Reversal of process not possible

No single point of failure

Double payment protection

No chargebacks from merchants

Immediate settlement

No scope for identity theft due to pseudonimisation

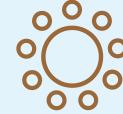
Reduced ability to defraud

Though limited supply, the market's ability to divide single units into smaller fractions

No need for a trusted third party intermediary



CHALLENGES



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Pseudonymity and Legal Enforcement

Privacy and Cybersecurity

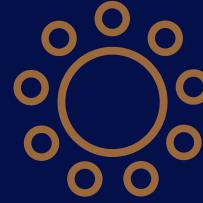
Complications Associated with Decentralized Autonomous Organizations (DAOs)

High Volatility

Complications due to Immutability and Irreversibility

Jurisdictional Questions

Bitcoin theft



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THANK YOU

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