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- **Cloud-Based Compliance and Documentation Systems: A Strategic Imperative for the Modern Practising Company Secretary in India's Evolving Regulatory Ecosystem**
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Cloud-Based Compliance and Documentation Systems: A Strategic Imperative for the Modern Practising Company Secretary in India's Evolving Regulatory Ecosystem

The corporate regulatory framework in India has changed significantly in its structure. The paper will look at whether the cloud-based compliance and documentation systems are a need or an option for the modern PCS professional in India's regulatory landscape post-2024. Using a multi-layered conceptual framework based on regulatory technology (RegTech) literature, the study assesses the cloud infrastructure on four points: It is suggested to use a novel four-layer cloud architecture. The results show that about 77 percent of the total operational costs can be saved by adopting the cloud, compared to traditional on-premises solutions, while deadline-miss events are cut by more than 83 percent, and the accuracy of form-filing is enhanced by 22-26 percent. The paper outlines a technology evolution pathway until 2033 that ranges from predictive compliance analytics, board minutes that are stored on blockchain with tamper-proof time stamps, and autonomous regulatory agents powered by generative AI.



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INTRODUCTION

The era of digital transformation has arrived for India's corporate governance. FY 2024-2026 was a particularly consequential period with the MCA completing the rollout of MCA21 V3 which involved multiple legacy processes being streamlined into a single modular form and the introduction of an Application Programming

Interface (API) first data-streaming architecture that will revolutionise the way statutory filings are conducted (MCA, 2026). At the same time, SEBI tightened the LODR timelines, and even RBI issued RBI (2024) Master Direction on Outsourcing of IT Services, stating that regulators expect the institutions to take responsibility for data integrity even if it is managed by a third party.

In this environment, the Practising Company Secretary (PCS) is no longer simply a form-filer, but rather a 24/7 digital compliance custodian that reacts to real-time signals from regulators, tracks the history of communications and transactions with regulators and other regulators' APIs, and acts on a wide range of other data in real time. This is at odds with the way most PCS practices are currently run: local storage is disorganized, email records are not shared nor easily accessible, and compliance calendars are kept in spreadsheets.

A structural solution is available in the form of cloud-based compliance systems. With SaaS, PaaS and IaaS delivery models running on servers located in India, and adhering to data localisation rules, PCS companies can streamline their entire documentation and filing process. This paper asserts that it's not an optional add-on, but a business requirement, for enterprises to adopt the cloud, driven by more than just efficiency it's necessitated by regulation. The key research question is: What should the architecture of compliance and how can it be justifiable for the specific statutory duties of Indian PCS professionals within the regulatory framework of 2024-2026.

LITERATURE REVIEW

a. Regulatory Technology (RegTech): Origins and Evolution

After the global financial crisis of 2008, banks and financial institutions (FIs) faced new compliance requirement under Basel III, Dodd-Frank and similar

national laws, spawning RegTech as a new discipline in the FinTech environment (Arner, Barberis, & Buckley, 2017). Arner et al. described RegTech as an evolutionary process that started with 'RegTech 1.0' (the simple digitisation of the manual compliance process) and progressed to 'RegTech 2.0' (cloud-based, data-centric and proactive risk management). They envision 'RegTech 3.0' – self-managed and AI-powered regulation interfaces. This evolution is reflected in the MCA's development from EDAC (1997) to MCA21, V1 (2006) to V3 (2023-2026) in the Indian setting, where each version called for advanced technology from the practitioners.

b. Cloud Computing: Definitional Framework and Service Models

The NIST Special Publication 800-145 (Mell & Grance, 2011) states that cloud computing is “a model for enabling ubiquitous, on-demand access to a shared pool of configurable computing resources that can be rapidly provisioned with minimal management effort. It has five key features on-demand self-service, broad network access, resource pooling, rapid elasticity, and measured service which meet the operational needs for compliance-driven PCS practices. There are three main service models (SaaS, PaaS, IaaS) and four main deployment models (public, private, community, hybrid) that have their own risk and compliance implications, as summarised in Table-1.

Table 1: Cloud Service Models and Their Application in PCS Compliance Practice

Service Model	Description	PCS Use Case	Example Vendors (India)
SaaS	Software delivered over the internet; no local installation required	Compliance portals, e-filing dashboards, and ROC form auto-fill	Zoho, Clear Tax, IRIS, MCA21 V3
PaaS	Cloud platform for developing, testing, and deploying applications	Custom workflow engines, regulatory rule builders	AWS GovCloud, Azure India, Google Cloud
IaaS	Virtualised computing infrastructure on demand	Secure document repositories, disaster recovery	NIC Cloud (MeitY), Reliance Jio Cloud, BSNL Cloud

Source - Authors own Contribution

c. Indian Regulatory Context: MCA21 V3, SEBI, and RBI

In their paper (Chandran et al. 2025), Chandran et al. explain the 'security by design' and 'modular API' philosophy of MCA21 V3 and its implications for parallel digital maturity of professional intermediaries. Their empirical findings from 240 PCS practitioners showed that 67 percent of practitioners are still using a hybrid paper-digital workflow in 2024, which results in systematic weaknesses in audit trails. The Master Direction on Outsourcing of IT Services (2024) and the DPDP Act, 2023, both provide a basis for making decisions about cloud adoption. The DPDP Act introduces the term 'Data Fiduciary' which is defined as a legal entity that establishes the purpose and means of the processing of personal data. When dealing with client corporate data, the DPDP Act also sets out positive obligations for PCS firms. It is

important to note that a PCS firm cannot outsource the responsibility of data protection to its cloud provider, it is an accountable Data Fiduciary and must ensure that its cloud provider acts as a compliant 'Data Processor' (MeitY, 2023).

d. Sustainability, ESG, and Green Computing

Kumaran and Kamal (2025) showed that cloud-centralised infrastructure has a significantly smaller per transaction carbon footprint compared to distributed on-premises servers, thanks to its ability to pool resources and due to energy-efficient hyperscale data centres. The progressively increasing external reporting mandates for listed companies within SEBI's BRSR framework will require PCS practitioners performing secretarial audits to report on the digitised verifiability of sustainability metrics for their clients. To generate and audit such metrics requires data to be stored in a centralised architecture, which is provided by cloud infrastructure.

e. Data Sovereignty and Vendor Lock-in Risks

Data sovereignty conflicts and vendor lock-in were identified as the two biggest structural challenges to cloud adoption for regulated professionals in a structured review of privacy issues in cloud-hosted professional data (Zandesh, 2024). The Data Sovereignty is governed under Section 16 of the DPDP Act, 2023 and sector-specific RBI guidelines where data of Indian citizens must be retained within the Indian borders. If a cloud provider stops providing certain services, or if it leaves India, then the proprietary API

ecosystems, along with non-portable data formats, could result in professional risk and compromise years of statutory records.

RESEARCH GAP

The current body of literature on RegTech and cloud computing is mainly geared towards large financial institutions and regulators. Research targeted at operational size, statutory requirements and resource constraints of individual or medium-sized PCS firms is very limited in India. A critical limitation in all the existing works is that none of them has suggested a practice-ready multi-layer cloud compliance architecture that covers MCA filing processes, SEBI disclosure management, RBI regulatory reporting and DPDP Act requirements all in one. This paper seeks to fill this void by designing a four-layer architecture with both regulatory specificity and practical implementability for firms that have between 2 and 50 professional staff members.

OBJECTIVES OF THE STUDY

This study pursues five specific objectives:

1. To assess the quantitative effect of cloud-based compliance systems on filing accuracy, operational cost reduction, and meeting deadlines for PCS practices.
2. To examine the architecture of cloud infrastructures and its ability to ensure high-availability and disaster recovery features, aligned to India's compliance cycles (mainly July-October and January-March).
3. To create an integrated four-layered cloud compliance framework, that caters to the concurrent regulatory requirements of MCA, SEBI and RBI.
4. To identify and recommend practical solutions to address the major issues of cloud adoption, data localisation, cybersecurity, skill gaps and interoperability from the regulatory and legal perspective in India.
5. To chart the technology trend for cloud-based compliance systems up to 2033 with predictive analytics, blockchain, and generative AI.

DISCUSSIONS: THE PRACTICE-ORIENTED CASE FOR CLOUD**a. Improving Compliance Accuracy and Reducing Operational Costs**

The biggest professional liability risk for a PCS is the false statement, incorrect certification and late filing under Section 448 of the Companies Act, 2013. There are three ways in cloud-based platforms for compliance reduce this exposure. First, automated deadline management engines sync up with the statutory deadline calendar provided by the MCA, SEBI and RBI and send out multi-level alerts ranging from early warning (15 days before) to critical notification (48 hours before) to principal escalation (on the day of the deadline). Second, there is a mapping challenge, as everything is combined with the name change, registered office change, object clause change and share capital restructuring in a single modular form, and cloud-based form engines can tackle this by using preconfigured rule sets (IncorpX, 2026). Third, the transition from Capex to OpEx lowers the fixed costs of an average 15-staff PCS company by about 77 per cent, as shown in Table 2.

Table 2: Comparative Cost Analysis – Traditional vs. Cloud-Based Compliance Infrastructure (Indicative figures for a 15-staff PCS firm, FY 2025–26)

Cost Parameter	Traditional Model (₹/yr)	Cloud Model (₹/yr)	Estimated Saving
IT Infrastructure (hardware + maintenance)	₹4,50,000	₹85,000	81% reduction (OpEx vs Capex shift)
Software Licensing	₹1,20,000	₹48,000	60% reduction (SaaS subscription)
IT Support Staff / Outsourcing	₹2,40,000	₹36,000	85% reduction (vendor-managed infrastructure)
Data Recovery & Backup	₹60,000	Included in SLA	100% cost elimination (bundled service)
Regulatory Penalty Risk (estimated)	₹3,00,000+	₹20,000–50,000	>83% reduction (automated deadlines)
TOTAL ESTIMATED COST	₹11,70,000+	₹2,69,000+	~77% aggregate saving

Source: Author's Contribution.

Note: Cost figures are indicative and based on market rates for cloud services in India (AWS India, Azure India, Zoho) and typical on-premises infrastructure costs for professional services firms. Actual savings will vary based on firm size, existing infrastructure, and chosen service tier.

Table 3: Cloud Adoption – Measurable Compliance Performance Improvement

Compliance Metric	Traditional Model	Cloud-Based Model	Improvement
Form Filing Accuracy Rate	72–78%	94–98%	+22–26 percentage points
System Uptime During Audit Season	85–90%	≥99.9%	+10–15 percentage points
Average Deadline Miss Rate (per firm/yr)	8–12 instances	0–2 instances	83–100% reduction
Time to Generate Secretarial Audit Report	3–5 working days	4–8 working hours	~80% time saving
Data Recovery Time Objective (RTO)	24–72 hours	<1 hour (geo-redundant)	>95% reduction in recovery time

Source: Author's Contribution.

b. High Availability and Uptime During Compliance Seasons

The regulatory filing process in India is a highly seasonal one. The 'Peak Compliance Season' is two focused windows one for the annuals (July-October) and one for the secretarial audit reports (July-October), one for board performance evaluation (July-October), one for SEBI quarterly disclosures (January-March), one for NBFC compliance certificate (January-March), one for advance tax filing (January-March). These times can see demand for the PCS documentation infrastructure rise by as much as 300-400 per cent over baseline. During these high-traffic times, traditional on-premise servers, which are optimized for average usage, often experience fluctuations in performance or even failure.

Cloud infrastructure solves the problem with elastic scaling, enabling the automatic provisioning of additional compute and storage resources without manual intervention. The hyperscale cloud services with data centres in India (AWS India, Microsoft Azure India Central, Google Cloud Delhi/Mumbai) offer 99.9 percent uptime SLAs (service level agreements) in their contractual agreements, which equals to an annual downtime of no more than 8.76 hours. Active-Active multi-region geographic redundancy means that even with failure of one data centre, there is no loss of access, something which no on-premise solution can economically achieve at a mid-sized practice level. The 'Anywhere Access' also allows distributed workforce models during peak times: A PCS principal can authorize filings made by a junior professional, and the entire review process cryptographically logs in the audit trail, meeting the Companies Act's condition of 'maker-checker' in electronic filing.

Over the years and successive regulatory periods, the role of Company Secretary has shown its ability to change from a legal compliance officer to an advisor to the governance.

c. Mitigation of Data Management and Professional Risk

Some of the most private corporate information that exists are the categories of data held by a PCS firm, the board resolutions, the statutory registers, the share certificates, the secretarial audit workpapers, the client DSC credentials and the confidential disclosures made to

SEBI. Physical files are susceptible to fire, flood, and theft. Ransomware attacks on local digital storage have become a common occurrence among professional service companies in India since 2022 (CERT-In, 2024). Cloud storage uses several layers of protection: AES-256 encryption at rest and in transit, immutable backup snapshots, geographic redundancy in at least two Indian data centres, and a Zero-Trust Architecture that validates all access requests, regardless of where the network comes from. A continuous, tamper-proof audit trail of all documents, generated and modified, is recorded through the cloud. This directly addresses the requirement of audit trail function in electronic books of account starting FY 2023-24 under Rule 3(1) of the Companies (Accounts) Rules, 2014. A PCS (practice control system) firm with records kept in a system that supports audit trails can provide a legally defensible record of all activities made on a client's statutory records which could make a significant difference if the matter goes before the SEBI or another regulatory authority for an audit or to court in case of a challenge under Section 209A of the Companies Act.

PROPOSED INTEGRATED CLOUD-BASED COMPLIANCE FRAMEWORK

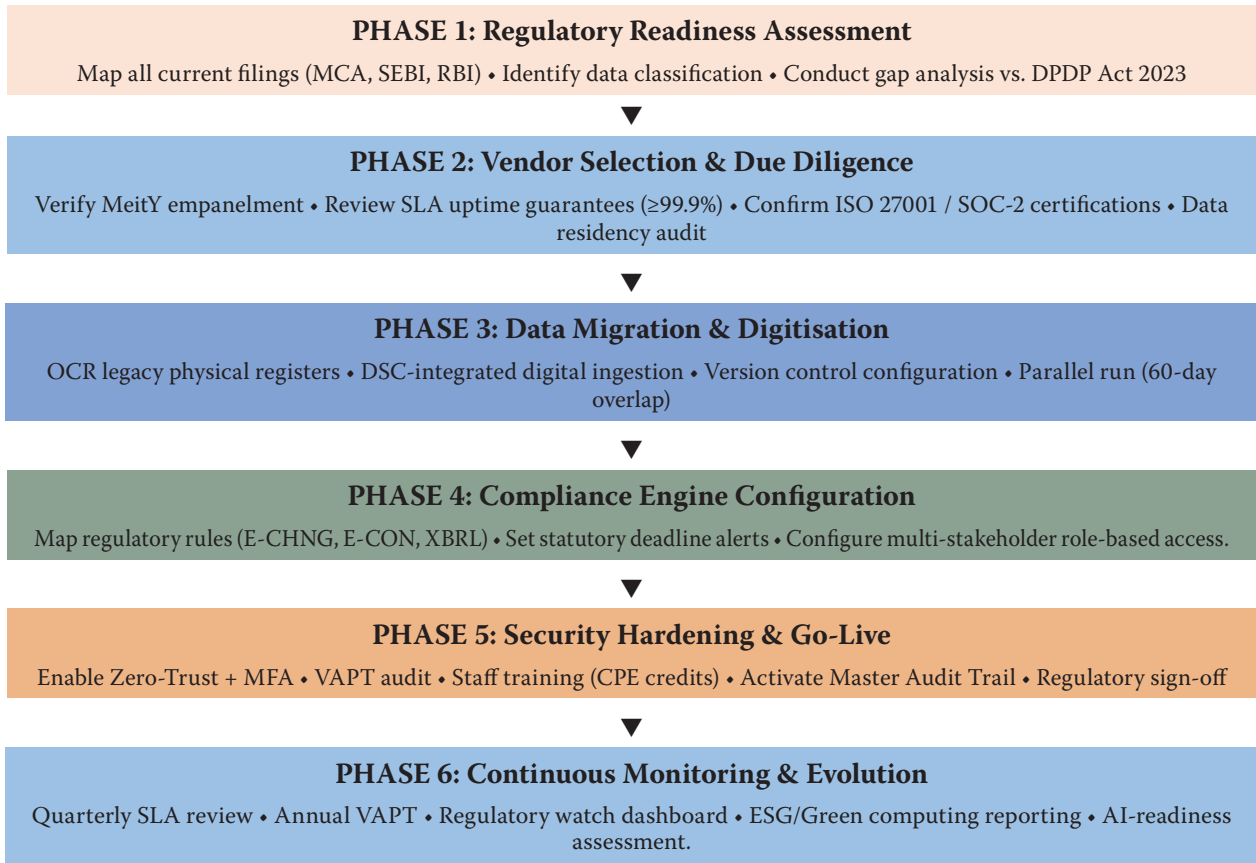
Based on literature review and operational requirements identified in Section 5, the paper suggests a four-layer cloud compliance framework specific to Indian practices of PCS. The framework is intended to be scalable, modular and support practices from sole practitioners to multi-partner practices with 50+ professional staff, and can be scaled as practices and/or regulatory needs change.

Table 4: Four-Layer Cloud Compliance Framework for Indian PCS Practices – Architecture, Functions, and Standards (Source -Authors own)

Layer	Name	Primary Function	Key Components & Standards
Layer 1	Infrastructure & Data Sovereignty	Raw data ingestion, storage, and localisation compliance	MeitY-empanelled CSPs; OCR digitisation of legacy registers; DSC-integrated ingestion; ISO 27001 certification; DPDP Act 2023 compliance controls
Layer 2	Logic & Compliance Automation	Rule-based processing, form mapping, and version control	Regulatory Rules Engine (E-CHNG, E-CON, XBRL); workflow approval system; version history; automated statutory deadline alerts; SEBI LODR timeline management
Layer 3	Multi-Stakeholder Interface	Role-based views for regulators, clients, and auditors	MCA View (E-CHNG/E-CON); SEBI View (LODR, BRSR/ESG); RBI View (CIMS, NBFC registers); Client Board Dashboard; External Auditor Read-only Portal
Layer 4	Security & Governance Overlay	Encryption, access control, and an immutable audit trail	Zero-Trust Architecture; AES-256 encryption at rest and in transit; MFA; Master Audit Trail (Companies Act Rule 9A compliant); SOC-2 Type II; VAPT annual certification

Source: Author's Contribution

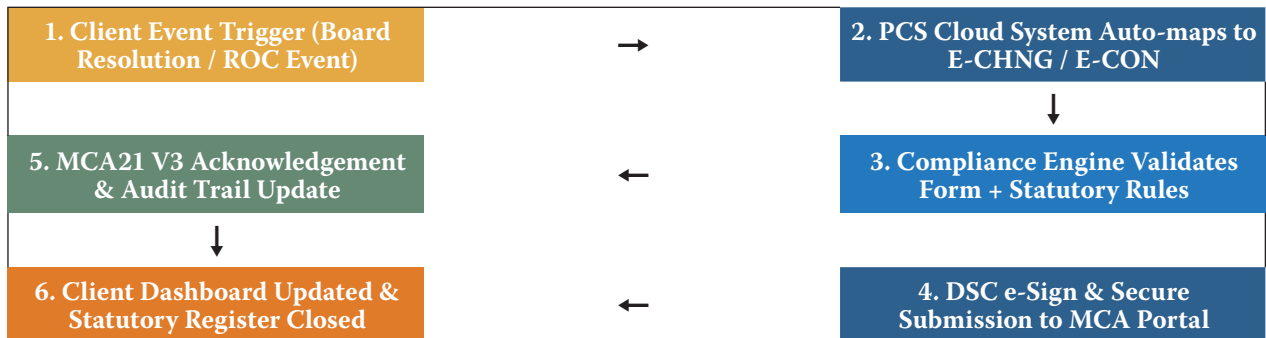
Figure 1: Cloud Adoption Decision & Implementation Flowchart for PCS Firms



Source: Author's Contribution

Note: Each phase gate requires PCS sign-off and documented evidence for regulatory defensibility.

Figure 2: MCA21 V3 Cloud-Integrated Filing Process Flow



Source: Author's Contribution

The architecture of this framework is designed to run in the vertical direction with raw data being fed into the system at Layer 1 (infrastructure); processed at Layer 2 (compliance engine); presented to stakeholders at Layer 3 (interface); and secured throughout by Layer 4 (security governance). Layer 3 provides independent role-specific interfaces for each regulator to ensure that SEBI LODR data or RBI NBFC registers are not inadvertently exposed to third parties during an MCA E-CHNG workflow. Data Sovereignty Guarantee is one of the critical design principles that all the four layers must be hosted on Cloud Service Providers (CSPs) that are empanelled by MeitY and committed to hosting the data within the territorial jurisdiction of India, abiding by the DPDP Act, 2023. Currently, MeitY has empanelled five CSPs (NIC Cloud, STPI Cloud, Reliance Jio Cloud, Tata Communications), and a limited number of foreign hyperscalers with dedicated data zones in India) for delivering Cloud services.

CHALLENGES AND MITIGATION STRATEGIES

The challenges of cloud adoption in the Indian PCS context are different from that of large corporate IT departments in terms of structural, regulatory and human issues. Table 5 provides an exhaustive challenge-mitigation matrix based on empirical evidence from the studies of RegTech adoption and the provisions of the regulatory frameworks in India.

Table 5: Cloud Adoption Challenges and Mitigation Strategies – Indian PCS Practice Context

Challenge	Root Cause & Regulatory Reference	Mitigation Strategy
Data Localization	RBI Master Direction (2024). DPDP Act 2023 mandates cross-border restrictions	Engage only MeitY-empanelled CSPs (e.g., NIC, STPI); contractual data residency clauses; audit cloud provider SLAs annually.
Cybersecurity	CERT-In Incident Reporting Rules 2022; SEBI Cybersecurity Framework 2024	Implement Zero-Trust Architecture; mandatory MFA for all portal access; SOC-2 Type II certified vendors; annual VAPT audits
Skill Gap	Low digital literacy in tier-2/3 PCS practices; no ICSI-mandated cloud curriculum as of 2025	Mandatory CPE credits for cloud literacy; ICSI-recognised Digital Compliance Certification (DCC) program; quarterly vendor training
Interoperability / Vendor Lock-in	Proprietary APIs; absence of a unified data standard across MCA, SEBI, and RBI platforms	Adopt Open Data Standards (ISO 27001, OData); a multi-cloud strategy; and an API-centric architecture with open connectors.
Cost Barriers	High initial migration cost for small PCS firms; variable pricing models of hyperscalers	Phased migration roadmap; shared-cost consortium model for small firms; government subsidy under the DIGI-CONNECT scheme
Regulatory Uncertainty	Evolving DPDP Rules; potential sector-specific cloud use guidelines from SEBI / RBI	Maintain the regulatory watch dashboard; subscribe to ICSI Info Capsules; engage legal counsel for quarterly compliance review.

Source: Author's Contribution

(References: DPDP Act 2023; CERT-In Rules, 2022; RBI Master Direction 2024; SEBI Cybersecurity Framework 2024; ICSI CPE Guidelines)

In addition to these structural issues, the PCS community is also challenged with one more: cloud adoption could mean that it poses a threat to the existing workflows, rather than an improvement. This mindset shift goes beyond the professional identity of 'document custodian' to become a 'digital governance architect. This change is already taking place in progressive PCS practices that have started to offer 'Real-Time Compliance Dashboards' that cost 25-40 per cent more than conventional secretarial retainers.

FUTURE EVOLUTION: TECHNOLOGY ROADMAP 2026–2033

As the technology of cloud meets AI, blockchain and green infrastructure requirements, the compliance landscape for PCS professionals will change in a fundamental way over the next decade. Table 6 is a structured roadmap to match the SEBI-MCA-RBI roadmap for the regulations.

Table 6: Cloud-Enabled Compliance Technology Roadmap for PCS Practices, 2026–2033

Horizon	Technology	Compliance Application	Expected Impact for PCS
2026–2028	AI-Assisted Form Mapping	Auto-populate E-CHNG/E-CON from corporate records	50–70% reduction in manual data entry time; fewer form-rejection errors
2027–2030	Predictive Compliance Analytics	Flag potential resolution conflicts before board approval	Proactive risk management; reduced professional negligence claims
2028–2032	Blockchain-Immutable Minutes	Tamper-proof board meeting records with embedded DSC timestamps	Eliminates backdating risk; legally defensible in regulatory inquiries
2029–2033	Green / Sustainable Computing Mandates	Digital carbon footprint reporting under ESG/BRSR frameworks	Cloud-centralised infra enables single-source energy audit; SEBI ESG compliance ready
2030+	Autonomous RegTech Agents (Gen-AI)	24/7 regulatory monitoring with self-filing for routine returns	PCS shifts from transactional compliance to a strategic advisory role

Source: Author's Contribution

The most impactful short-term trend is the incorporation of LLM-powered AI into cloud compliance tools. The models are trained on the Companies Act 2013, SEBI LODR Regulations, RBI Master Directions and ICSI Secretarial Standards and can be used to review draft resolutions, identify potential Ultra Vires actions, identify contradictions with existing Articles of Association and produce first drafts of statutory notices and Secretarial audit reports. It does not replace, nor diminish, the role of the PCS professional, but makes it more than ever one of strategic oversight and of providing professional certification, functions which demand human judgment and personal legal responsibility that cannot be algorithmically replaced.

The addition of blockchain has the potential to revolutionize the PCS role of minute keeping and board meeting documentation. A blockchain anchored minutes register which includes a cryptographic link to the prior minutes entry, an immutable minutes timestamp, and the DSC hash of the certifying PCS, creates a much more legally defensible minutes history than any conventional digital record, and is tamper evident. The pilot implementations have been documented in Singapore's ACRA digital corporate registry and the UK's Companies House digital transformation programme, offering proof of concept in the Indian regulatory landscape.

LIMITATIONS

There are some limitations to this study. The conceptual design of the four-layer framework has not been tested empirically using a controlled deployment study, future research should focus on field validation across a representative sample of PCS firms. Secondly, the DPDP Rules had not been finalised when they were submitted and the exact nature of professional services information might necessitate changes to the data localisation architecture of the Rules. Thirdly, the framework assumes at least 20 Mbps broadband connection, a service that is not available in some tier-3 cities and semi-urban areas where PCS practices are providing service to local corporate customers. Lastly, the cost figures presented in Table 2 reflect the published market rates only—the actual savings will depend on the negotiated pricing, the existing infrastructural write-offs and transition costs not notionalized in the static comparison model.

CONCLUSION

The author comment that based on regulatory requirements, architectural evidence and quantitative performance data, the compliance and documentation systems in the cloud is not just a technological update, it is a strategic imperative for Practising Company Secretaries working in the regulatory environment of post-2024 India. The automation and API-first approach of MCA21 V3, along with data protection mandates of DPDP Act 2023, SEBI and RBI's cybersecurity expectations, and ESG reporting requirements under BRSR have made it impossible for on-premise systems to meet compliance

infrastructure requirements within an economical and reliable framework on a scale of a professional practice. The technology roadmap to 2033 also confirms that today's cloud adoption will enable practitioners to take cloud, AI, blockchain, and green computing capabilities without having to reinvent the architecture. Over the years and successive regulatory periods the role of Company Secretary has shown its ability to change from a legal compliance officer to an advisor to the Board.

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Appendix A: Glossary of Technical and Regulatory Terms

Term / Abbreviation	Definition
AES-256	Advanced Encryption Standard with 256-bit key length; gold standard for data encryption at rest and in transit.
BRSR	Business Responsibility and Sustainability Reporting – SEBI’s mandatory ESG disclosure framework for listed companies.
DPDP Act 2023	Digital Personal Data Protection Act, 2023 – India’s primary legislation governing personal data processing, establishing Data Fiduciary obligations.
E-CHNG	Electronic Change Form – MCA21 V3 module consolidating name change, registered office shift, object clause amendment, and capital restructuring.
E-CON	Electronic Conversion Form – MCA21 V3 module for entity type conversions (e.g., private to public company).
IaaS	Infrastructure-as-a-Service – Cloud delivery of virtualised computing, storage, and networking resources.
MeitY	Ministry of Electronics and Information Technology – Governs India’s IT policy; operates the CSP empanelment scheme.
PaaS	Platform-as-a-Service – Cloud delivery of development and deployment platforms.
PCS	Practising Company Secretary – A Fellow or Associate Member of ICSI holding a Certificate of Practice.
RegTech	Regulatory Technology – Application of digital technology to regulatory compliance, reporting, and monitoring.
SaaS	Software-as-a-Service – Cloud delivery of software applications accessed via a web browser.
SLA	Service Level Agreement – Contractual commitment by a CSP regarding uptime, performance, and support.
VAPT	Vulnerability Assessment and Penetration Testing – Mandatory security audit under CERT-In and SEBI Cybersecurity Framework.
XBRL	Extensible Business Reporting Language – Machine-readable financial data standard mandated by MCA for financial statement filings.
Zero-Trust Architecture	A security model that requires verification of every access request regardless of network location or prior authentication status.

