



ICMAI
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Behind every successful business decision, there is always a CMA



Mission Statement

"The CMA professionals would ethically drive enterprise globally by creating value to stakeholders in the socio-economic context through competencies drawn from the integration of strategy, management and accounting."



Vision Statement

"The Institute of Cost Accountants of India would be the preferred source of resources and professionals for the financial leadership of enterprise globally."

About The Institute

The Institute of Cost Accountants of India is a statutory body set up under an Act of Parliament in the year 1959. The Institute as a part of its obligation, regulates the profession of Cost and Management Accountancy, enrolls students for its courses, provides coaching facilities to the students, organises professional development programmes for the members and undertakes research programmes in the field of Cost and Management Accountancy. The Institute pursues the vision of cost competitiveness, cost management, efficient use of resources and structured approach to cost accounting as the key drivers of the profession. In today's world, the profession of conventional accounting and auditing has taken a back seat and cost and management accountants are increasingly contributing toward the management of scarce resources and apply strategic decisions. This has opened up further scope and tremendous opportunities for cost accountants in India and abroad.

After an amendment passed by Parliament of India,

the Institute is now renamed as **"The Institute of Cost Accountants of India"** from **"The Institute of Cost and Works Accountants of India"**. This step is aimed towards synergising with the global management accounting bodies, sharing the best practices which will be useful to large number of transnational Indian companies operating from India and abroad to remain competitive. With the current emphasis on management of resources, the specialized knowledge of evaluating operating efficiency and strategic management the professionals are known as **"Cost and Management Accountants (CMAs)"**. The Institute is the largest Cost & Management Accounting body in the world, having approximately 5,00,000 students and 1,00,000 members all over the globe. The Institution headquartered at New Delhi operates through four regional councils at Kolkata, Delhi, Mumbai and Chennai and 112 Chapters situated at important cities in the country as well as 11 Overseas Centres. It is under the administrative control of Ministry of Corporate Affairs, Government of India.

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Chairman's Message



**"Success is the sum of small efforts,
repeated day in and day out."**

— Robert Collier

I am deeply honoured and profoundly humbled to address our readers as the Chairman of the Banking, Financial Services and Insurance Board (BFSIB) of The Institute of Cost Accountants of India for the year 2025–26. My sincere gratitude to the august Council for its trust, and to my esteemed colleagues for their unwavering dedication in advancing the Institute's objectives.

Within the BFSIB, we are privileged to be guided by a constellation of distinguished leaders from banking, financial services, and insurance. Our deliberations serve as living laboratories of intellectual exchange—where vision merges with practical insight, charting a path for professional ascendancy.

"The BFSIB stands poised to elevate the professional footprint of CMAs within India's transformative financial ecosystem."

Strengthening the CMA Footprint

The 22nd edition of the BFSI Chronicle arrives at a decisive moment for India's financial sector—symbolising resilience amidst global headwinds and embracing innovation through digital reinvention. The Cost and Management Accountants have become vital anchors in this transformation, driving financial discipline, risk intelligence, and data-driven decision-making.

Recent quarters reflect robust progress: capital markets have deepened, prudential norms have matured, and technology has redefined operational and regulatory frameworks. These shifts reinforce CMAs' role as strategic partners in financial governance and institutional integrity.

Capacity Building and Knowledge Leadership

The BFSIB remains firmly committed to upskilling practitioners through focused and forward-thinking learning modules. Our specialised certificate courses in Treasury and International Banking, Fintech, Credit Management and Concurrent Audit exemplify our integrative learning philosophy—where theory, technology, and regulation converge.

Complementing these initiatives are regulator-focused webinars and policy-oriented publications that decode complex frameworks into practical applications. Through such continuous engagement, BFSIB strengthens the professional relevance of CMAs in an evolving regulatory ecosystem.

"Our mission is to translate regulatory insight into professional excellence—bridging policy intent with practice."

Driving Research and Sectoral Insight

Our recent publications have set benchmarks of thought leadership across financial disciplines. From the widely acclaimed Aide

Memoire on Infrastructure Financing to incisive monographs on Central Bank Digital Currency (CBDC) and Climate Risk & Net Zero Finance, each initiative highlights ICAI's thought stewardship in sustainability, technology, and innovation.

India's macro-financial resilience—evidenced by a record-low gross NPA ratio of 2.6% (RBI Financial Stability Report, June 2025)—has opened new avenues for innovation and inclusion. Working-capital mobilization via TReDS and MSME financing through SIDBI exemplify the expanding frontiers of finance where CMAs are indispensable contributors to compliance assurance and governance reform.

Collaborations and Regulatory Synergy

Our collaborative initiatives with leading regulatory bodies—RBI, SEBI, IRDAI, and IFSCA—reflect BFSIB's proactive engagement in policymaking and professional education. Seminars and outreach programmes featuring distinguished officials across these institutions have enriched members with regulatory foresight, ethical frameworks, and analytical precision.

Building upon our ongoing engagements with financial regulators and policy institutions, the BFSIB continues to support initiatives that align professional expertise with evolving supervisory frameworks. In this context, a notable development has been the Reserve Bank of India's recent release of the draft framework on the implementation of the Expected Credit Loss (ECL) approach for provisioning by banks—marking a decisive shift from the existing incurred loss model towards a forward-looking, risk-based provisioning system in line with global financial reporting standards. This reform is expected to strengthen early credit risk identification, enhance balance sheet resilience, and foster greater transparency in financial disclosures. As responsible stakeholders in India's banking and financial ecosystem, members of The Institute of Cost Accountants of India are encouraged to carefully evaluate this draft and share their considered views with the Secretary, Banking, Financial Services & Insurance Board (BFSIB). Insights from our professional community will add immense value to the public consultation process and aid in shaping a balanced, data-driven, and contextually relevant implementation framework for the Indian banking sector.

BFSIB also continues to advocate for CMA inclusion in institutional recruitment, audit empanelment's, and financial consultancy mandates—ensuring equitable representation and professional acknowledgment within the national BFSI framework.

"As finance converges with sustainability and digital transformation, CMAs stand as sentinels of prudence, innovation, and integrity."

Vision for the Future

Looking ahead, our roadmap is defined by agility, ambition, and alignment with emerging paradigms. BFSIB will deepen its engagement in fronts such as digital assurance, treasury analytics, sustainable finance, ESG reporting, and risk-modelling frameworks. Each initiative will bridge regulatory developments with actionable insights for the profession.

As India moves confidently toward Viksit Bharat 2047, the role of CMAs becomes ever more critical—to ensure that fiscal transparency, ethical governance, and innovative stewardship remain the bedrock of nation-building.

I invite every member and student of our Institute to seize the opportunities carved by evolving markets, to participate actively in BFSIB's knowledge ecosystem, and to uphold the CMA brand as a symbol of competence, ethics, and innovation. Let us collectively advance our profession—fortifying the pillars of financial transparency and contributing meaningfully to India's inclusive growth journey.

With best wishes for your continued success and professional enrichment.



CMA Chittaranjan Chattopadhyay
Chairman, Banking, Financial Services & Insurance Board (BFSIB)
The Institute of Cost Accountants of India (ICAI)

From the Desk of the Department

As the lamps of festivity illuminate homes across the nation, a parallel radiance glows in the corridors of India's economy. The air is tinged with optimism — a confidence born of resilience and reform. The Government's recent gesture of reducing GST across a spectrum of products has rekindled consumer cheer, gently lifting disposable incomes and invigorating the spirit of consumption.

Yet, beyond this celebratory horizon, the global stage remains clouded with uncertainty. Regions like Afghanistan and Pakistan find themselves ensnared in domestic turmoil, while the haunting echoes of conflicts in Russia-Ukraine and Israel-Hamas continue to cast long geopolitical shadows. The tremors of impending tariff revisions by the United States threaten to ripple across world trade, unsettling the delicate balance that sustains export-dependent economies, particularly within the BRICS fraternity.

In this intricate dance of global volatility and domestic steadiness, the Reserve Bank of India stands as a sentinel of prudence. In its October 2025 Monetary Policy, the central bank has chosen the path of calibrated caution — retaining the repo rate at 5.50 percent and maintaining a neutral stance, even as it nudged the growth forecast upward to 6.8 percent for FY 2025-26. This subtle yet confident move reflects the RBI's delicate balancing act between growth and stability, between aspiration and realism.

More importantly, the policy is interlaced with an array of structural and regulatory measures that promise to deepen India's financial architecture. From the introduction of a risk-based deposit insurance premium and the withdrawal of outdated frameworks for specified borrowers, to proposals enabling M&A financing by domestic banks, enhanced lending against listed securities, and facilitating rupee-based cross-border borrowing — each initiative carries the imprint of foresight. The RBI's gradual transition toward Expected Credit Loss (ECL) provisioning and its emphasis on ease of doing business in exports underscore a forward-looking vision aligned with global best practices.

Together, these reforms weave a narrative of confidence — a reaffirmation that India's financial system is not merely surviving the tides of change, but rising resiliently with grace, adaptability, and global relevance.

The numbers, too, tell a compelling story. A 7.8 percent GDP growth in Q1 stands as testimony to India's enduring economic vitality, fuelled by the twin engines of a bountiful monsoon and robust rural consumption. The World Bank's upward revision of India's growth outlook to 6.5 percent for FY 2025-26 mirrors this sentiment, acknowledging the dynamism of domestic demand and the simulative impact of recent GST recalibrations.

A judicious blend of tax rationalization and policy reforms

has widened the channels of disposable income, transforming consumer confidence into tangible growth. This surge in consumption, in turn, has set off a virtuous cycle — one where spending begets production, production fuels employment, and employment enriches the national spirit.

While India's growth story unfolds in vibrant hues, the global canvas remains mottled with uncertainty — from volatile capital flows and tariff tremors to geopolitical flashpoints that continue to test the mettle of emerging economies. Yet, amid this turbulence, India's trajectory remains steadfast — a ship of stability navigating through choppy international waters.

Encouragingly, inflation has been tamed with commendable dexterity. Supported by a favorable monsoon, stable food prices, and improved supply chains, the RBI now projects CPI inflation at a comfortable 2.6 percent for FY 2025-26. The cooling of prices has not only restored consumer confidence but also paved the way for sustained growth in real incomes. The forthcoming implementation of the 8th Pay Commission for central government employees promises to further infuse purchasing power into the economy, creating a ripple effect that could elevate both consumption and investment.

Recent GST adjustments, encompassing nearly 11 percent of the CPI basket, have provided additional moderation in prices, amplifying the festival of affordability that is now unfolding across markets. The confluence of monetary stability, fiscal prudence, and progressive governance paints a picture of an India poised for yet another leap in its economic journey.

Amid these broader developments, the RBI's framework for Self-Regulatory Organizations (SROs) in fintech emerges as a landmark reform — one that aims to bring order, transparency, and accountability to a rapidly expanding digital ecosystem. The meteoric rise of UPI transactions and the Government's focus on Digital Public Infrastructure (DPI) underscore the deepening of financial inclusion and the evolution of a tech-empowered economy.

However, the RBI's watchful gaze remains fixed on the growing vulnerabilities within the NBFC and digital lending space, where exuberance at times overshadows prudence. Its intensified oversight signals a commitment to ensuring that innovation flourishes, but never at the cost of stability.

As the nation basks in festive brightness, India's economic story glows as a beacon of hope in an uncertain world — a story of tempered optimism, disciplined resilience, and transformative vision. Guided by sound policies, strengthened by institutional foresight, and buoyed by the spirit of its people, India continues to script a narrative that is as radiant as the festival lights that adorn its skyline.

Incurred Loss Approach Vs. Expected Credit Loss Approach



CMA (Dr.) P. Siva Rama Prasad,
*Former Asst. General Manager,
State Bank of India,*

The Reserve Bank of India (RBI) recently released draft guidelines for a new Expected Credit Loss (ECL) framework for banks, which will replace the current “Incurred Loss” model by April 1, 2027. This forward-looking approach requires banks to provision for potential future credit losses based on the probability of default, loss given default, and exposure at default, rather than waiting for loans to become non-performing. The transition period includes a five-year glide path to mitigate the impact on banks’ capital positions.

Key aspects of the Draft Guidelines:

- ➔ **Shift in provisioning:** Banks will move from the current incurred loss model (making provisions after losses have occurred) to the ECL model (making provisions based on expected future losses).
- ➔ **Implementation timeline:** The new framework is set to be implemented starting April 1, 2027, with a transition period for banks to adjust their provisions by March 31, 2031.
- ➔ **Loss estimation:** Banks will estimate losses by considering factors like the probability of default

(PD), loss given default (LGD), and exposure at default (EAD).

- ➔ **Asset classification:** A three-stage system will be used to classify assets based on credit risk:
 - ✿ Stage 1: Low risk
 - ✿ Stage 2: Significant increase in credit risk
 - ✿ Stage 3: Credit-impaired
- ➔ **Glide path for transition:** A five-year glide path will be provided to help smooth out the impact of the new provisioning requirements on banks’ capital.
- ➔ **Model design:** Banks will be allowed to design their own credit loss models based on the guidelines provided by the RBI.
- ➔ **Incurred loss vs. ECL:** Under the current incurred loss model, provisions are made after a loan turns bad. The ECL model will require banks to be more proactive and make provisions earlier.
- ➔ **Applicability:** The guidelines are applicable to all Scheduled Commercial Banks (excluding Small



Finance Banks, Payments Banks, and Regional Rural Banks) and All India Financial Institutions.

The main difference is that the Incurred Loss Approach recognizes losses only after they have been incurred, which causes a delay in provisioning, while the Expected

Credit Loss (ECL) approach is forward-looking, requiring banks to provision for potential future losses based on historical data, current conditions, and future forecasts. India is moving from the incurred loss system to the ECL model to improve the timeliness and accuracy of provisions and to align with global standards like IFRS 9.

Feature	Incurred Loss Approach	Expected Credit Loss (ECL) Approach
Timing of Loss Recognition	Reactive: Provisions are made only after a loss is actually incurred or a credit event has occurred.	Proactive: Provisions are made based on <i>expected</i> future losses, even before a loss has occurred.
Basis for Provisioning	Based on past and current information, with a focus on identified credit events like defaults.	Based on a forward-looking assessment, which includes historical data, current conditions, and reasonable and supportable forecasts of future economic conditions.
Key Drawback	Delays the recognition of potential losses, which can lead to an overstatement of income and underestimation of risk, especially during economic downturns.	Aims to provide a more accurate and timely reflection of credit risk.
Global Standards	This was the previous global standard (e.g., under IAS 39).	This is the new standard under IFRS 9, adopted or being adopted by many countries.
Impact	Provisions are often made too late, increasing systemic risk.	Recognizes potential losses earlier, enhancing financial stability and transparency.
Example	A bank waits until a loan is clearly in default for a significant period before creating a large provision.	A bank assesses the likelihood of default for a loan based on economic forecasts and provisions for the potential loss even if the borrower is not yet delinquent.

Shift from Incurred Loss to Expected Credit Loss:

The shift from an Incurred Loss (IL) approach to an Expected Credit Loss (ECL) approach in banking was primarily driven by the need for more timely, forward-looking, and transparent provisioning. The 2008 financial crisis exposed the critical weaknesses of the old model, which was often criticized as being “too little, too late”.

- ➡ **Incurred Loss model limitations:** The incurred loss model was a reactive, backward-looking approach that required objective evidence of a loss event before a provision could be made. Its key weaknesses included:
- ➡ **Delayed recognition of losses:** Banks could only recognize a loss after a trigger event, such as a loan being 90 days past due. This often meant that provisions were not made until a bank was already in a severe downturn, which can exacerbate a crisis.

- ➡ **Contributed to procyclicality:** During economic booms, loan defaults were low, leading banks to build insufficient provisions. When a downturn hit, a sharp rise in defaults forced large, sudden provisions, which further strained the banks and led to a credit crunch.
- ➡ **Overstated income:** The delay in recognizing losses meant that banks’ reported income was often overstated during the lead-up to a crisis. This also impacted banks’ capital bases by inflating dividend payouts.
- ➡ **Inconsistent with financial valuation:** The model contradicted the fundamental principle of financial valuation, which holds that an asset’s value should reflect all expected future cash flows, including expected credit losses.
- ➡ **Expected Credit Loss model improvements:** The ECL model, introduced globally under standards

like IFRS 9 and CECL, directly addresses the flaws of the incurred loss approach. It mandates that banks proactively estimate and set aside provisions for potential future credit losses from the moment a loan is originated.

Key Improvements under the ECL Model include:

Forward-looking Approach: The ECL model requires banks to incorporate forward-looking information, such as macroeconomic forecasts, when estimating potential losses. This allows banks to provision for anticipated risks before they materialize into actual defaults.

- ➔ **Earlier recognition of risk:** Provisions are now made on a more timely basis, with loans classified into three stages based on changes in credit risk since origination:
 - ❁ Stage 1: Loans with no significant increase in credit risk. A provision is made for the expected losses over the next 12 months.
 - ❁ Stage 2: Loans with a significant increase in credit risk. A provision is made for the expected losses over the lifetime of the loan.
 - ❁ Stage 3: Credit-impaired loans, requiring a lifetime loss provision.
- ➔ **Improved credit risk management:** The model gives banks greater flexibility to build sophisticated credit risk models based on their own data and portfolio specifics. This enhances the quality of risk management and provides better incentives for banks to measure risk accurately.
- ➔ **Greater transparency for investors:** The more realistic and timely recognition of credit losses provides investors and analysts with a better picture of a bank's true financial health. This increases transparency and allows for a more direct comparison of financial institutions on a global scale.
- ➔ **Enhanced financial stability:** By forcing banks to build up reserves earlier and more systematically, the ECL framework aims to strengthen the resilience of the banking system and mitigate the

procyclical effects of the previous model.

Key challenges for Indian Banks include:

A) Data and Technology Infrastructure:

Data availability and quality: Implementing ECL is a data-intensive exercise that requires banks to have sufficient historical data covering at least one economic cycle. Many banks, especially smaller institutions, lack the granular, loan-level data necessary to accurately compute ECL.

System integration: Banks need to revamp and integrate multiple internal systems across finance, risk management, and IT to align with the new framework. Many manual processes currently used will not be acceptable under ECL.

B) Modelling and Methodology:

➔ **Complex modelling techniques:** ECL calculation requires sophisticated models for probability of default (PD), loss given default (LGD), and exposure at default (EAD). Indian banks, particularly smaller ones, may lack the internal expertise and resources to develop, test, and validate these complex models.

➔ **Forecasting macroeconomic factors:** The ECL framework requires banks to incorporate forward-looking information and macroeconomic forecasts into their models. This adds a significant layer of complexity and subjectivity, as banks must predict how variables like GDP, inflation, and interest rates will affect their loan portfolios.

C) Financial and Capital Impact:

➔ **Initial hit to profitability:** The move to ECL will likely entail a one-time increase in provisioning requirements, as banks must recognize potential losses much earlier. This will be recognized through the bank's profit and loss (P&L) account and could act as a drag on capital resources during the transition period. Some estimates suggest an initial industry-wide provisioning requirement in the range of ₹90,000 crore to ₹1 lakh crore.

➔ **Earnings volatility:** Because ECL is based on forward-looking estimates, provisions can be more volatile and sensitive to changes in economic

conditions, potentially impacting profitability ratios.

D) Management and Operational Issues:

- ➡ **Increased management judgment:** The principle-based nature of the ECL framework gives bank management more discretion in assessing credit risk and calculating provisions. This raises concerns about the potential for banks to smooth profits and for outside investors to accurately assess the appropriateness of these judgments.
- ➡ **Inconsistent outputs and model validation:** Without proper validation processes, banks face challenges in justifying their ECL numbers and explaining period-on-period movements due to potential inconsistencies in model outputs.
- ➡ **Regulatory uncertainty:** While the Reserve Bank of India (RBI) has issued draft guidelines, banks are awaiting a final circular. Regulatory backstops have been proposed to act as a safety net against overly optimistic modelling, but the potential for differing interpretations remains.
- ➡ **Capacity building:** The new framework requires significant upskilling of personnel across multiple functions, including risk, IT, and compliance. There is a scarcity of qualified professionals with the specific expertise needed for ECL.
- ➡ **Auditing and disclosure:** ECL standards require significantly higher disclosure requirements for how provisions are calculated. Auditors and regulators will need to scrutinize these complex models and judgments.

ECL in the World:

Expected Credit Loss (ECL) provisions have been implemented in the banking sectors of over 140 countries

following the adoption of the IFRS 9 accounting standard. The United States has its own version, the Current Expected Credit Loss (CECL) standard, which was implemented later.

- ✿ IFRS 9: This global standard for expected credit loss accounting has been adopted by more than 140 countries.
- ✿ CECL: The United States adopted a similar approach with the Current Expected Credit Loss (CECL) standard, which became mandatory for public companies in 2020.

Implementation Timelines:

- ✿ IFRS 9 was largely implemented globally around 2018.
- ✿ CECL in the US became effective for public companies in 2020.

While the underlying principle of using expected losses instead of incurred losses is the same, the specific models and implementation details can vary by country and the adopted standard.

To Conclude, major issues perceived in the implementation of Expected Credit Loss (ECL) provisions in Indian Banks primarily involve the significant shift from a backward-looking “incurred loss” model to a proactive, forward-looking one. This transition demands substantial changes in data, technology, modelling, and capital management.

References:

1. RBI Circulars.
2. IMF Circulars.

Different Types Of Audit In The Banks



Shri Govind Gurnani
*Former Assistant General Manager
Reserve Bank of India*

An audit is a routine examination of the records and services of the organisation to ensure whether they are in compliance with the laws and standards of the industry.

In layman words, Audit refers to an examination of the books of accounts and records of an enterprise to certify that the profit and loss account and the balance sheet are properly drawn up so that it exhibits a true and fair view of the financial state of affairs of the business.

1. 'Concurrent Audit' is a systematic and timely examination of all financial transactions on a regular basis to ensure accuracy, authenticity and compliance with procedures and guidelines. It is an ongoing appraisal of the financial health of an entity to determine whether the financial management arrangements (including internal control mechanisms) are effectively working and identify areas of improvement to enhance efficiency.

2. 'Operational Audit' is the type of audit service that mainly focuses on the key processes, procedures, systems, & internal control. Unlike a financial audit, which focuses solely on financial statements, an operational audit digs deeper to assess the efficiency, effectiveness, and overall performance of a company's business and its processes.

3. 'Management Audit' involves auditing the functioning of all the departments to find gaps in performance and efficiency. A management audit evaluates whether the management team is working in the interests of shareholders, employees, and the company's reputation.

4. 'Financial Audit' provides an independent assessment of a bank's financial statements, ensuring accuracy and reliability. This process is crucial for maintaining investor confidence, as it reassures stakeholders about the health and performance of the institution. Financial audits are crucial for maintaining confidence in the financial system, ensuring regulatory compliance, and protecting the interests of stakeholders.

5. 'Internal Audit' refers to an independent audit to evaluate an organisation's internal controls, its corporate practices, processes, and methods. The role of internal audit is to provide independent and objective assurance that an organisation's risk management, governance, and internal control processes are operating effectively, thereby ensuring the organisation can achieve its goals

6. An 'External Audit' is a financial review that is conducted by a party not associated with the company or department that is voluntarily or involuntarily under audit. External audits are performed by third parties to provide a comprehensive review of your financial practices. An external auditor typically reviews



reporting accuracy, system configurations, access controls, transaction processing, data integrity and compliance.

7. 'Risk Based Internal Audit' involves identifying and prioritising risks, assessing the effectiveness of existing controls, and recommending actions to mitigate risks. Risk-based internal audit involves the assessment of the risks' maturity level, expressing opinion on adequacy of the policies and processes established by the management to manage the risks. Risk-based internal audit mainly report on the risk management that includes identification, evaluation, control and monitoring of the risk. A risk-based internal audit mainly focuses on the objectives rather than looking at the controls and transactions.

8. 'Statutory Audit' is a legally required review of the accuracy of a company's financial statements and records. The purpose of a statutory audit is to determine whether an organisation provides a fair and accurate representation of its financial position by examining information such as bank balances, bookkeeping records, and financial transactions.

9. 'Government Audit' means the organised and independent examination of a public entity's financial, administrative and other operations for evaluating and verifying them. Government audits, conducted by qualified professionals, ensure the accuracy and reliability of financial statements, internal controls,

and the use of public funds. They play a very important role in maintaining the integrity, trust, and accountability of government entities.

10. 'Tax Audit' refers to the process of inspection and verification of books of accounts of a taxpayer to ensure their adherence to the provisions of the Income tax Act, 1961. Any company exceeding certain limits of turnover is liable to get the accounts audited within the Income tax Act, 1961.

11. 'Forensic Audit' is a detailed examination of the financial and operational records of a business with the objective to find any evidence that supports or proves that fraudulent activity has indeed occurred and to what extent it has occurred. A forensic audit is conducted in order to prosecute a party for fraud, embezzlement or other financial claims.

12. 'Energy Audit' is the most effective tool for optimising the efficiency of the plant without affecting the output of the system. Energy Audit is an effort to improve its energy efficiency, energy quality, and energy intensity.

13. 'Electrical Safety Audit' is carried out to identify anomalies in Electrical installations which may lead to fire hazards, electric shocks, damage to equipments and lead to breakdown and production loss. Electrical audit as per IEE / NEC standards helps



to identify lapses in the electrical system and assures standard operation and maintenance.

14. 'Compliance Audit' examines the bank's policies and procedures to see if they comply with internal or external standards. Compliance audit helps in identifying risks, finding areas of non-compliance, and filling gaps to improve operational processes. A compliance audit assesses the comprehensiveness of an organisation's compliance measures, security protocols, internal controls, and risk assessment strategies.

15. 'Legal Audit' is carried out in the banks to re-verify the title deeds and other documents periodically in respect of all credit exposures of ₹ 5 crore and above till the loan stands fully repaid. Under extant RBI instructions, the legal audit is to be carried out on quarterly basis.

16. 'Snap Audit' is carried out to check and verify certain specific aspects within the bank or branches in respect of certain borrowers in certain inevitable situations. Snap audit is based on test checks, which are used to verify events, controls, and records.

17. 'Information Systems Audit' is carried out to detect issues relating to software development, data processing, and computer systems. Information systems audit aims to establish whether information systems are safeguarding corporate assets, maintaining the integrity of stored and communicated data, supporting corporate objectives effectively, and operating efficiently.

18. 'Revenue Audit' of bank branches is the audit of items governing the income & expenditure of banks. The audit is conducted to verify the accuracy, and relevance of expenditure incurred & incomes earned by the banks according to applicable latest notification and circulars.

19. 'Investment Audit' refers to the audit of the banks compliance with specific guidelines issued by RBI on the investments to be made by the banks including the cash reserve ratio & statutory liquidity ratio requirements. Under this, the auditors check that the investment policy is correctly followed and all the investments are done according to the RBI directives. These reports are required to be submitted at predetermined frequencies.

20. 'ESG Audit' is an assessment of the risks an organisation faces related to environmental, social, and governance domains, and can provide a level of assurance over the integrity of a company's ESG statements. ESG audits can be internal or external. An ESG audit helps to determine the specific moves your company needs to take to shut down risks and capture opportunities most relevant to its goals. An ESG audit verifies the accuracy of your ESG-related disclosures.

21. 'Fraud Detection Audit' in banks involves testing and assessing a bank's systems, controls and processes to identify vulnerabilities and confirm the effectiveness of fraud prevention measures. This audit aims at preventing financial losses by identifying risks before they escalate into major fraud events.

Working Capital Loans-Stock and Book Debt Audit in Banks (Role of CMAs)



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As per the Reserve Bank of India's (RBI) Annual Report for 2024–25, Frauds in the Advances or Loan Portfolio, which includes 'Cash Credit and Working Capital Loans', accounted for the "Largest Share of Fraud Value" in the Indian Banking Sector. This occurred even as the Total number of Fraud Cases Declined.

Frauds in the Loans Portfolio in FY 2024–25:

Total Fraud Value: Over ₹ 33,148 Crores, or more than 92% of the Total ₹ 36,014 Crores in Banking Frauds reported, was related to the Advances or Loan Category.

Total Fraud Cases: There were 7,950 Fraud Cases in the Advances Segment, nearly double the number from the Previous Year.

Modus Operandi: These Loan-related Frauds often involve the Diversion of Funds, Overvaluation of Collateral, and Manipulation of Financial Statements.

Based on their specific expertise in Cost and Inventory Management, Cost Accountants (CMAs) are highly suitable for conducting Stock Audits of Working Capital Loans, and their Experience from Section 148 of the Companies Act, 2013, can enhance the Quality of these Audits. A CMA's Role focuses on

the detailed analysis of Production Costs, Operational Efficiency, and Accurate Inventory Valuation, which directly addresses a Bank's primary concerns for Working Capital Loans.

Expertise of Cost Accountants in Stock Audits: The Specialization of CMAs provides a Distinct Advantage in performing Bank Stock Audits:

- ➡ **Comprehensive Inventory Valuation:** CMAs are experts in detailed inventory valuation, including the proper treatment of raw materials, work-in-progress (WIP), and finished goods, which are the main securities for Working Capital Loans.
- ➡ **Wastage and Loss Analysis:** Their training enables them to easily Identify and Quantify Normal and Abnormal Losses and Wastages in the Production Process. This is crucial for assessing the true Realizable Value of the Stock, which is a major factor in calculating a Borrower's Drawing Power.
- ➡ **Production and Capacity Analysis:** CMAs analyse the relationship between Input and Output to identify Inefficiencies and Bottlenecks in Production. This provides insight into the Company's overall Operational Health and its ability to Generate Cash Flow.
- ➡ **Strong Internal Control Assessment:** Their experience includes Evaluating the Effectiveness of Internal Controls related to the Procurement, Maintenance, and Consumption of Stock. Weak Controls can lead to a Higher Risk of fraud and Inventory Manipulation, which a CMA is trained to detect.
- ➡ **Early Warning Signals:** CMAs are adept at using Cost Data to identify warning signals that could indicate an account is heading toward Non-Performing Asset (NPA) Status. This enables a bank to take timely, preventative measures.

Relevance of Section 148 of Companies Act, 2013 Experience:

The mandatory Cost Audits under Section 148 of the Companies Act, 2013, and the related Companies (Cost Records and Audit) Rules, 2014, provide CMAs with relevant Experience for Bank Stock Audits.

- ➡ **Rigorous Reporting Framework:** The Rules require maintaining detailed Cost Records in Form CRA-1, covering Material Costs, Employee Costs, Utilities, and more. This instils a discipline for precise and 'Granular Data Analysis' that is directly applicable to a Stock Audit.
- ➡ **Cross-checking and Reconciliation:** Cost Auditors

must prepare reports that include a Reconciliation of Cost and Financial Records. This expertise is invaluable for 'Cross-checking Stock Statements' submitted to the Bank against the Company's Internal Accounts.

- ➡ **Experience in Diverse Sectors:** Cost Audits are mandatory for Companies in specific "Regulated and Non-regulated Sectors", exposing CMAs to Complex Manufacturing and Service Industries. This broadens their experience in managing various types of Inventories.

Value for Banks: Engaging Cost Accountants for Stock Audits offers several Advantages for Banks:

- ➡ **Deeper insight into Operational Efficiency:** Beyond simple Physical Verification, a CMA can provide a Qualitative Assessment of the Borrower's Operational Management. This allows the bank to make 'Better Credit Monitoring Decisions'.
- ➡ **More Accurate Risk Assessment:** A Granular Analysis of Stock Valuation and Inventory Health lead to a more reliable 'Calculation of Drawing Power' and a truer assessment of the Bank's Primary Security Position.
- ➡ **Fraud Detection:** The Focus on 'Cost Reconciliation and Process Analysis' helps uncover Potential Fraud, such as inflated Stock Figures or Diversion of Funds.
- ➡ **Enhanced Credit Control:** "Regular, Detailed Stock Audits" by a CMA help enforce better Financial Discipline on Borrowers, ensuring timely submission of accurate Stock Statements and Compliance with Loan Covenants.

Justification of CMAs to Stock Audit (In Detail): Section 148 of the Companies Act, 2013, deals with the maintenance of Cost Records and the conduct of Cost Audits in certain classes of Companies. It empowers the Central Government to direct these Companies to include Cost-related particulars in their Books of Account and to mandate a 'Cost Audit for them based on specified Criteria like Net Worth or Turnover'. This Audit must be conducted by a "Cost Accountant" appointed by the 'Board of Directors.'



Provisions of Section 148:

Cost Record Maintenance: The Central Government can direct specified companies engaged in the production of certain goods or provision of certain services to include cost-related details in their books of account.

- ➡ **Cost Audit:** For companies meeting specific Net Worth or Turnover thresholds, the Central Government can mandate a Cost Audit of their Cost Records.
- ➡ **Cost Accountant:** The Audit must be conducted by a Cost Accountant who is a Practicing Professional.
- ➡ **Board Appointment:** The Board of Directors is responsible for Appointing the Cost Auditor.

Consultation with Regulatory Bodies: Before issuing an order for a Class of Companies regulated by a Special Act, the Central Government must consult the relevant Regulatory Body.

Applicability and Exemptions: The requirement for Cost Records and Audit applies to specific classes of Companies Listed in the Companies (Cost Records and Audit) Rules, 2014.

- ❁ Companies are generally exempt from the Cost Audit requirement if their Export Revenue in Foreign Exchange exceeds 75% of their Total Revenue or if they operate from a 'Special Economic Zone'.
- ❁ Compulsory Cost Audits under the Companies Act, 2013, apply to Companies in specified 'Regulated and Non-regulated Sectors', including Drugs, Pharmaceuticals, Fertilizers, Telecommunications, and Automobiles.
- ❁ Other Industries subject to Audit include Cement, Steel, Textiles, Paper, Plastics, and Various Service Providers like Power Generation and Transportation.

The full list is detailed in "Table A and Table B" of the Companies (Cost Records and Audit) Rules, 2014 as mentioned below:

- a) **Regulated Sectors (Table-A):** Drugs and Pharmaceuticals-Fertilizers-Telecommunications-

Power Generation-Transportation-Motor Vehicles (including parts)-Electrical Equipment-Insecticides-Tyres and Tubes-Pulp and Paper-Iron and Steel-Coffee and Tea.

- b) **Non-Regulated Sectors (Table-B):** Cement-Steel-Textiles-Paper-Plastics-Automobiles-Chemicals-Glass-Mining and Minerals-Machinery and Mechanical Appliances (e.g., Engines, Pumps)-Basic Metals (e.g., Aluminium, Copper)-Construction Industry-Rubber and Allied Products-Jute and Jute Products-Edible Oil-Inorganic and Organic Chemicals.

Note: This List is based on the Companies (Cost Records and Audit) Rules, 2014 and is not exhaustive. The specific threshold for Turnover / Net Worth determines which Companies in these Sectors are required to have a Cost Audit.

Working Capital Loans are more Risk when Compare to Term Loans:

Working Capital Loans backed by Inventory and Receivables, banks must rely on accurate and reliable valuations of this security, which is the Primary Objective of a Stock and Book Debts Audit. The Audit confirms that the Stock and Book Debts claimed by the borrower actually exist and are legally charged to the Bank, preventing Fraud and Double Financing.

Industry Practice, consistent with RBI's emphasis on Risk Management, dictates that Banks may increase the frequency of Audits for High-risk Borrowers or Large Exposures. This provides Banks with a more Current Picture of the Borrower's Inventory and Receivables, reducing the Time a Borrower has to hide Financial Issues.

- ➡ Unlike a Fixed Asset used for a Term Loan, the Collateral for a Working Capital Loan consists of Inventory (Stock) and Receivables (Book Debts). The Value, Quantity, and Quality of these Assets can change rapidly, making them Less Stable as a Security.
- ➡ Working Capital Funds are intended for Day-to-Day Operational Expenses and Cash Flow Management, making the End-use harder to monitor than for a Term Loan, which is tied to a specific Asset Purchase.



- ➡ Continuous, Revolving Credit Facilities leave Banks Vulnerable to Fraud, such as Borrowers Overstating Stock, presenting fictitious Receivables, or Diverting Funds. Stricter Monitoring is required to prevent such Malpractices.

Conclusion:

Based on regulations from the Reserve Bank of India (RBI) and best practices for credit risk management, the premise that Working Capital Loans require more frequent audits than Term Loans is required. While the specific threshold for Audits varies by Bank, the ₹ 5 Crores exposure

amount is a plausible benchmark that aligns with stricter monitoring for higher-value accounts. As Working Capital (Cash Credit) loans are considered “Higher Risk than Term Loans” due to their Short-term, Revolving nature and the Volatility of the Collateral. Regular Audits are Critical for Risk Mitigation; this practice is mandated by the Reserve Bank of India (RBI) for Larger Credit Exposures.

References:

1. RBI Circulars.
2. Bank Guidelines.



Money Mule Operations and the Role of AI/ML in Detection



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Abstract:

Money mule operations pose a significant challenge to financial institutions worldwide. Individuals, knowingly or unknowingly, transfer illegally acquired funds between accounts to obscure the trail of crime. With the rise of online banking and digital payments, the complexity and frequency of these operations have surged. Artificial Intelligence (AI) and Machine Learning (ML) are increasingly being leveraged to detect and prevent money mule activities. This article explores the concept of money mules, patterns associated with their operations, and the implementation of AI/ML for mitigation.

1. Introduction

A money mule is an individual who transfers illicit funds on behalf of criminals, often receiving a commission for the service. Money mules play a crucial role in laundering money, making it difficult for authorities to trace the origin of illicit funds. Financial institutions, regulatory bodies, and law enforcement agencies are constantly seeking innovative ways to combat this activity.

Key Risks Associated with Money Mules:

- Facilitation of fraud and cybercrime - Legal consequences for mules - Damage to the reputation of financial institutions

2. Money Mule Patterns

Several behavioral patterns are indicative of money mule

activities. Identifying these patterns is critical for financial institutions:

- 1. Unusual Transaction Patterns:** Rapid transfer of funds to multiple accounts, often overseas.
- 2. Multiple Account Ownership:** Individuals holding several accounts in different banks without a clear purpose.
- 3. Transaction Timing:** Transfers conducted at odd hours or immediately after receiving funds.
- 4. Inconsistent Customer Information:** Mismatched personal information or frequent address changes.

5. High-Risk Channels: Using less secure channels like peer-to-peer transfers or cryptocurrency wallets.

Example Diagram:

[Customer Account] --> [Mule Account] --> [Criminal Account]

This simple flow illustrates how funds are moved to obscure the original source.

3. Role of AI and ML in Detection

Traditional methods of detecting money mule activities rely heavily on manual reviews and predefined rules. However, these methods are often insufficient due to the dynamic nature of fraudulent operations. AI and ML models provide a data-driven approach to enhance detection capabilities.

Applications of AI/ML:

- ✳ **Anomaly Detection:** ML algorithms analyze transaction histories to flag unusual behaviors that deviate from a customer's normal pattern.
- ✳ **Network Analysis:** AI models map account interactions to identify suspicious networks of accounts used for fund transfers.
- ✳ **Predictive Modeling:** Historical fraud data is used to train models that predict the likelihood of an account being used as a mule.
- ✳ **Natural Language Processing (NLP):** AI can analyze customer communications and detect fraudulent intent based on language patterns.

Sample ML Workflow:

Data Collection --> Feature Engineering --> Model Training --> Fraud Detection --> Alerts

4. Case Studies

Case Study 1: A European bank implemented an ML-based transaction monitoring system. Within six months, it detected 85 previously unknown money mule accounts, reducing potential losses by millions.

Case Study 2: An AI system employed by a global fintech platform used network analysis to identify clusters of mule accounts. Early intervention prevented significant fund transfers and assisted law enforcement in investigations.

5. Challenges and Considerations

- ✳ **Data Privacy:** Using AI models must comply with data protection regulations.
- ✳ **False Positives:** ML models may flag legitimate accounts as suspicious, requiring careful tuning.
- ✳ **Adaptive Criminal Behavior:** Criminals continuously change tactics, necessitating regular updates to AI/ML models.
- ✳ **Integration with Existing Systems:** Banks must ensure seamless integration of AI models into their transaction monitoring workflows.

6. Conclusion

Money mule operations remain a significant threat in the digital era. AI and ML technologies offer promising solutions to detect and prevent these activities efficiently. By leveraging behavioral analysis, network mapping, and predictive modeling, financial institutions can reduce risk and protect both themselves and their customers. Continued investment in advanced analytics, staff training, and regulatory compliance is essential to staying ahead of evolving fraud tactics.

References:

1. *Financial Action Task Force (FATF) Reports on Money Laundering*
2. *European Banking Authority: Anti-Money Laundering Guidelines*
3. *Journal of Financial Crime, AI and ML in Fraud Detection*

RBI Framework For Formulation of Regulations: A Forward Looking Approach



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Background

The history of commercial banking in India dates back to 18th century with the establishment of Bank of Hindustan in 1770 in Kolkata. This was followed by creation of Presidency Banks viz Bank of Bengal in 1809, Bank of Bombay in 1840 and Bank of Madras in 1843. These Presidency banks merged in 1921 to form Imperial Bank of India, which acted as a commercial bank, banker's bank and banker to the government until the Reserve Bank of India (RBI) was established as the Central Bank in April 1935 under the RBI ACT 1934. The introduction of Cash Reserve Ratio (CRR) way back in July 1935 was one in the 1st regulation applicable on scheduled banks. The Banking Regulation Act 1949 formed the statutory basis of bank supervision and regulation in India. The statutory Liquidity Ratio (SLR) was introduced for the first time. Over the period of more than 90 years of its existence RBI as the regulator of commercial banks has played a central role in strengthening India's financial sector, ensuring stability, and supporting inclusive growth. RBI has taken a very significant step to create a robust and

transparent Framework on the Regulations to keep a pace with growth aspirations of the country in the changing eco system.

Reserve Bank of India has now issued a Policy statement on 7th May 2025, formally conveying Framework for formulation of Regulations. This lays down the principles of formulation and amendment of Regulations issued by RBI. The Framework seeks to Standardize the process of making Regulations in a transparent and consultative manner. This is in keeping with the forward looking approach aimed at effectively serving the wider interests of all stakeholders. Here we delve into the various approaches of making regulations and then discuss the main features of the Framework For Formulation of Regulations introduced by RBI.

Approaches to regulation making

World over different models and approaches are being adopted to regulate the financial systems. These include sectoral or traditional model (separate sector wise regulator like banking,



insurance and securities), the integrated model (single agency) and partially integrated approach (Two separate agencies). Broadly there are three approaches to framing of regulations viz Principle based vs Rule based vs Outcome based regulation. In the context of RBI as banking regulator the 'Prudential Framework for Resolution of Stressed Assets' is an example of principle-based regulation. The Master Directions on Priority Sector Lending - Targets and Classification' can be categorised as an example of rule based regulation. The RBI's 'Directions on Digital Lending' put emphasis on the desired outcome i.e transparency and fairness for borrowers rather than getting into specifics like lending rates or methods.

Principle and Outcome - based approach

Gaining experience out of over 90 years of successful operations as a regulator, RBI is gradually shifting towards "Principle and Outcome - based regulations", since it gives operational flexibility to the regulated entities for conduct of their operations, and tailor the activities to their unique needs, while adhering to the regulatory framework for delivering the outcomes expected from them.

Main Features of the Framework for Formulation of Regulations

To provide it legal and regulatory authority, the RBI is empowered to formulate regulations and issue directions, guidelines, notifications, orders, policies, specifications and standards under the various Acts and rules. The role of RBI as a regulator has widened and deepened and evolved over a period of time, with the development of economy in general and financial

sector in particular, as new laws and Acts have been enacted over the period of time.

a) The relevant applicable Acts under the Framework are listed as under :-

- 1) The RBI Act 1934
- 2) The Banking Regulations Act 1949
- 3) The National Housing Bank Act 1987
- 4) The Payment and Settlement Systems Act 2007
- 5) The Credit Information Companies (Regulation) Act 2005
- 6) The Factoring Regulation Act 2011
- 7) SARFAESI Act 2002
- 8) The Foreign Exchange Management Act 1999
- 9) Government Securities Act 2006
- 10) Special Economic Zones Act 2005

The major number of sections and rules applicable are covered under the first two Acts mentioned and discussed above.

Public Consultation

In order to make the process more objective, transparent and useful, the necessity and desirability of having the views / observations / comments of the stakeholders and members of the public has been taken care of in the Framework.

Accordingly, the Framework provides that before issuance of a Regulation, RBI shall publish the draft of such Regulation along with 'statement of particulars' on official website of RBI and seek public comments.

The 'statement of particulars' shall inter alia include:

- a) the enabling provision (s) that empower RBI to issue the regulation,
- b) the objective (s) of the regulation, including an impact analysis to the extent feasible;
- c) guidance from the international standard setting bodies of best practices, if any
- d) the manner of the Regulation and
- e) the time lines for receiving comments from the public (minimum 21 days)

The feedback received from public shall be considered by RBI and it shall provide a general statement of its response to the comments received, along with final Regulation on its website.

To make the process still more focused for eliciting wider response from the stakeholders, a provision has been made in the framework to explore additional mechanism for engaging with the stakeholders as considered appropriate. In this respect RBI may, where deemed necessary, issue a discussion paper for eliciting response to

issues and questions for consultation, before preparing and publishing the draft of the Regulation. For example in order to effectively address the issue of climate change, the RBI had come out with a comprehensive discussion paper on 'Climate Risk and sustainable Finance' in July 2022.

Impact Analysis Of The Regulation

Before finalizing the Regulation, the RBI shall conduct an impact analysis of the Regulation, to the extent feasible. This is a very pragmatic step to test the efficacy of the proposed Regulation. Regulatory Impact Assessments are essential tools for policy makers, enabling the development of policies, which are based on evidence, are clear in their objectives and responsive to real world conditions. The intent is to both minimize systemic risks

and protect consumers, while enhancing compliance by the regulated entities by making it easier for them to comply with the regulations.

Amendments And Review

It is also proposed in the Framework that any significant amendments to the Regulation shall again be subject to the process of public consultation and undertaking Impact analysis of the Regulation as stated above. The Regulations in force are also proposed to be Reviewed Periodically, based on experience gained through surveillance, supervision and enforcement actions and after taking into account the relevance of the respective Regulations in changing environment, global best practices or standards prescribed by international setting bodies and relevant orders passed by courts and tribunals. The periodic review of the Regulations is thus expected to serve the objectives in an optimal manner.

Non -Applicability on certain matters

To take care of emergent circumstances and requirements of confidentiality or specific objectives, the Regulation Framework has made in-built provision for "Non - applicability on certain matters". Therefore, as per the framework, the RBI may after Recording Reasons, dispense with or suitably modify any or all provisions of this framework inter alia in the following cases:

- a) in the opinion of RBI, confidentiality is to be maintained; or,
- b) following the procedure under the Framework would defeat the objective (s) or purpose of the proposed Regulation;
- c) for reasons of public interest, the RBI considers expedient to do so; and
- d) any urgent intervention required

In addition, a 'Savings' clause has also been included in the Framework to bring in clarity and to ensure continuity, which states as under :-

Savings

- 1) Notwithstanding anything contained in this Framework, a Regulation which is in force as on the date of issuance of this Framework shall continue to remain valid, though future changes would be subject to procedure envisaged herein.
- 2) No Regulation issued by RBI, or any action taken under this Framework shall be invalid merely by reason of non-adherence to any provision specified herein.



Way Forward - Forward Looking Approach

The RBI has exhibited a pragmatic and forward looking approach in preparing Framework for Formulation of Regulations with emphasis on enhancing transparency, fostering trust, and improvement in quality and effectiveness of the regulations.

The RBI has now decided to further strengthen the institutional mechanism for review of Regulations and has announced on 17th September 2025, the constitution of a Regulatory Review Cell (RRC) in the department of Regulation. Effective from October 1 2025, the RRC would undertake review of Regulations in a phased manner.

To strengthen the stakeholder engagement in the regulatory process and to utilise industry expertise on a continuous basis, an independent Advisory Group on Regulation (AGR) has also been set up concurrently.

In order to channel industry feedback in an effective manner for review of regulations through RRC, 6 experts from a diverse set of institutions have been included in the AGR to bring in a wider perspective. The members of AGR

include experts from PSU bank, NBFC, Co-operative Bank, Domestic private sector bank, Small Finance Bank and Insurance sector.

There is a need to maintain an optimal balance between stability with adequate safeguards and fostering innovation, efficiency and competition.

The Framework is expected to help in building a financial system that is both resilient and adaptable to meet the requirements of a developing economy in our quest to become a *Viksit Bharat*.



RBI's Revised Co-lending Arrangement Directives to Boost Transparency



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On 6-7-2025, the Reserve Bank of India ('RBI') notified the 'RBI (Co-Lending Arrangements) Directions, 2025', to establish a unified regulatory framework for banks and Non-Banking Financial Companies ('NBFCs') to jointly lend through structured co-lending arrangements. These Directions aim to enhance transparency, ensure prudent risk-sharing, and strengthen borrower protection in collaborative lending models. These Directions shall come into force from 1-1-2026, or on any earlier date as determined by the Regulated Entities ('REs') based on their internal policies.

The Reserve Bank of India (RBI) has introduced a significant regulatory framework aimed at enhancing the lending landscape in India through Co-Lending Arrangements (CLAs). This initiative is particularly relevant

for regulated entities (REs) such as commercial banks and non-banking financial companies (NBFCs), allowing them to collaborate in extending credit to borrowers while adhering to prudential regulations.

The Need for Co-Lending Arrangements:

Co-lending has gained traction in recent years, especially following the RBI's circular dated November 5, 2020, which provided a specific regulatory framework for priority sector lending. This framework has encouraged banks and NBFCs to work together, thereby broadening the scope of credit availability for various borrower segments. The new Co-Lending Arrangements Directions, 2025 aim to provide clarity on the permissibility of such arrangements while addressing prudential and conduct-related aspects.

Co-lending is Beneficial for both Commercial Banks and NBFCs

Co-lending arrangements are beneficial for both commercial banks and NBFCs in India by sharing risks, increasing lending reach, and improving credit flow, especially to priority sectors like MSMEs. Banks gain access to wider customer bases and leverage NBFCs' origination expertise, while NBFCs gain access to cheaper funds, enhanced credibility, and the ability to offer more competitive interest rates. Both benefit from shared risk, which minimizes potential losses and allows them to handle larger loans or new markets.

Benefits for Commercial Banks:

- *Risk Management:* Risk is diversified across a larger portfolio and a wider customer base, including segments they may not typically reach directly.
- *Greater Reach:* Banks can tap into new customer segments through NBFCs' existing networks and origination expertise.
- *Meets Priority Sector Targets:* Co-lending allows banks to meet their Priority Sector Lending (PSL) targets by partnering with NBFCs.
- *Enhanced Customer Experience:* Banks can leverage NBFCs' innovative and flexible approaches to offer more personalized services.

Benefits for NBFCs:

- *Access to Low-cost Funds:* Partnering with banks gives NBFCs access to cheaper capital, allowing them to offer more competitive interest rates.
- *Improved Credibility:* Partnerships with established banks can enhance an NBFC's market credibility and brand image.
- *Risk Reduction:* The shared risk model allows NBFCs to take on larger loans or lend in riskier segments, as losses are spread across partners.
- *Wider Reach:* NBFCs can expand their reach to more customers by collaborating with banks.

Shared benefits:

- *Increased Credit Flow:* The combined resources of banks and NBFCs can increase the flow of credit, particularly to underserved and priority sectors like MSMEs.
- *Efficiency:* Co-lending arrangements can speed up loan approvals and reduce the time it takes to fund borrowers.

Key highlights of Co-Lending Directions:

- ➡ Under the new framework, co-lending arrangements ("CLAs") will be governed through ex-ante agreements between an originating Regulated Entity (RE) and a partner RE. These agreements will define the joint funding of loans, secured or unsecured, in predetermined proportions, with clearly articulated terms for revenue sharing, risk allocation, and operational responsibilities.
- ➡ A CLA refers to a documented arrangement between an originating RE and a partner RE to jointly finance a portfolio of loans in agreed proportions. The agreement will be executed prior to loan disbursement and will be required to include provisions for revenue sharing, risk participation, and compliance with applicable regulatory norms.
- ➡ Lending services under CLA encompass customer acquisition, underwriting, pricing, servicing, monitoring, and recovery, which may be performed



by the REs or their agents, subject to the RBI's Master Direction on Outsourcing of Financial Services. All other terms used in the Directions carry the meanings assigned under applicable laws or commercial usage.

- ➔ The Directions apply to:
- ➔ Commercial banks (excluding Small Finance Banks, Local Area Banks, and Regional Rural Banks)
 - ✿ All-India Financial Institutions
 - ✿ NBFCs, including Housing Finance Companies.
- ➔ These Directions will not be applicable to loans sanctioned under multiple banking, consortium lending, or syndication.
- ➔ Digital lending arrangements will remain governed by the RBI's Digital Lending Directions, 2025, but if digital platforms are used for co-lending, the CLA

Directions also apply.

- ➔ Each RE will be required to retain at least 10% of every individual loan on its own books, ensuring both entities maintain a financial stake in the exposure. Additionally, REs is required to update their credit policies to incorporate CLA-related provisions, including internal exposure limits, borrower segmentation strategies, partner due diligence protocols, and grievance redressal mechanisms.
- ➔ The CLA agreement will outline borrower selection criteria, product lines, operational areas, fee structures, segregation of responsibilities, timelines for information exchange, and customer protection protocols.
- ➔ The loan agreement signed with the borrower will clearly identify the single point of contact for customer service and disclose the roles and



responsibilities of each RE. Any change in customer interface will be communicated to the borrower in advance. Additionally, all relevant details should be disclosed in accordance with the RBI's Key Facts Statement ('KFS') circular dated 15-4-2024.

- ➡ Under the Directions, borrowers will be charged a blended interest rate based on the weighted average of rates from each RE, with any changes promptly communicated. All fees will be included in the Annual Percentage Rate ('APR') and disclosed in the KFS. Service fees will be required to follow objective criteria and exclude credit enhancement or default guarantees unless permitted.
- ➡ The partner RE needs to commit to its loan share upfront, with both REs recording their portions within 15 days. If not transferred, the loan remains with the originating RE and can only be transferred in accordance with RBI's loan transfer guidelines.
- ➡ Separate borrower accounts are required, and all transactions can go through an escrow account. The agreement will define fund allocation clearly.
- ➡ Loans under CLA will be audited and supported by a business continuity plan. KYC norms apply, with the partner RE allowed to rely on the originating RE. Fair practices and grievance mechanisms should be upheld.
- ➡ Originating REs can offer a default loss guarantee ('DLG') up to 5% of outstanding loans, subject to digital lending norms. Asset classification is borrower-level, if one RE flags a borrower as Special Mention Account or Non-Performing Asset, the other will do the same. Classification data will be shared promptly.
- ➡ Loan transfers require mutual consent and can follow RBI's transfer rules. Each RE will be required to report its share to Credit Information Companies ('CICs') individually, as per the Credit Information Companies (Regulation) Act, 2005.
- ➡ Disclosure norms are stringent, requiring REs to list all active CLA partners on their websites and include aggregate CLA data in their financial statements under 'Notes to Accounts.'

- ➡ These disclosures will cover loan volumes, interest rates, fees, sectoral distribution, performance, and DLG details, reported quarterly or annually as applicable.
- ➡ With these Directions, RBI has repealed its earlier circular on co-lending to the priority sector dated 5-11-2020, and the existing arrangements remain valid until aligned with the new framework.
- ➡ By mandating clear contractual terms, transparent pricing, robust operational protocols, and borrower-centric disclosures, it fosters responsible collaboration between financial institutions while safeguarding the interests of borrowers and maintaining systemic stability.
- ➡ Overall, the Directions aim to formalize co-lending, ensure transparency, and protect borrowers while strengthening collaboration between financial institutions.

Conclusion:

The Directions, by expanding the scope beyond priority sector lending and providing a detailed operational and compliance framework, aim to provide specific regulatory clarity on the permissibility of CLAs. The Directions offer a balanced structure that encourages collaborative credit delivery, while safeguarding borrowers and ensuring prudent risk-sharing between financial institutions. For instance, the Directions prioritise borrower interests through mandatory disclosures via the 'Key Facts Statement', a single point of contact, and clear grievance redressal channels. Further, by requiring each regulated entity to retain at least 10% (ten percent) of the individual loan exposure on their books and synchronising assets classification at the borrower level, the Directions incentivise proper due diligence and shared accountability in credit origination and servicing.

Reference:

1. Reserve Bank of India (Co-Lending Arrangements) Directions, 2025 (RBI/DOR/2025-26/139)
2. DOR.STR.REC.44/13.07.010/2025-26 dated: August 06, 2025

Audit on 'Autopilot Mode'

(Business Rule Engines-BREs)



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Abstract:

A Business Rules Engine (BRE) serves as a Pivotal Tool for the Auditing of Business Logic by generating comprehensive Audit Trails and elucidating insights into Operational Processes. BREs constitute Software Solutions that assist organizations in Defining, Analysing, Executing, Auditing, and Maintaining their Business Rules. These Systems can be acquired independently or may be Integrated within a Business Process Management Suite (BPMS).

The following describes several benefits associated with the utilization of a BREs:

- ✓ *Compliance: BREs facilitate organizational compliance with regulatory frameworks. Furthermore, they aid enterprises in monitoring adherence to Internal Policies as*

well as Industry-specific Regulations.

- ✓ *Efficiency: BREs enhance the Speed and Consistency of decision-making within organizations. They also contribute to a reduction in the duration Employees expend on routine Decision-making Processes.*
- ✓ *Accuracy: BREs serve to diminish the incidence of Human Errors while ensuring conformity with established Standards and Regulatory Mandates.*
- ✓ *Flexibility: BREs empower organizations to implement modifications without necessitating extensive Code Rewrites.*
- ✓ *Productivity: BREs enable IT Professionals and Developers to Collaborate in a more Effective and Efficient manner.*

A Business Rule Engine (BRE) constitutes a sophisticated software application designed for the Auditing of Business Logic Frameworks. In the Banking Sector, it serves to Automate the enforcement of Business Regulations, thereby enhancing the Efficiency, Accuracy, and Compliance of Business Operations.

Business Rule Engines (BREs) are essential components within the Banking, Financial Services, and Insurance sector. They assume a crucial function in optimizing operations, ensuring adherence to regulations, and improving decision-making frameworks. These engines represent advanced software systems specifically engineered to govern and automate business rules and logic, which are essential for navigating the complex and frequently regulated landscape of financial services.

The BFSI sector is characterized by a landscape where regulatory mandates and market conditions are perpetually in flux. BREs provide unmatched flexibility in these operations. They enable organizations to swiftly adjust to evolving rules and requirements, thereby guaranteeing compliance with both industry standards and internal protocols.

The capacity for adaptability is particularly paramount for financial institutions, as it empowers them to proficiently navigate the complex and continuously evolving landscape of risk management, fraud detection, and compliance. Business Rule Engines (BREs) present numerous advantages within the Banking, Financial Services, and Insurance (BFSI) sector, augmenting operational efficiency, risk management, and compliance efforts.

Decision-making represents a fundamental component within the domain of Business Operations. It frequently encompasses a multitude of considerations:

- ➡ Compliance, legal frameworks, and regulatory dimensions.
- ➡ Stakeholder engagement.
- ➡ Financial matters, including budgeting and taxation.
- ➡ Approval processes and requisite documentation.

Additionally, various other elements influence the decision-making paradigm within an organization.

In contexts where the Rules and Procedural Workflows are distinctly Articulated, Complications are typically absent.

However, certain uncharacteristic scenarios occasionally transcend the limitations of these established protocols. In such instances, adherence to Standard Operating Procedures becomes infeasible; consequently, alternative regulations must be delineated to facilitate the progression of decisions to subsequent phases.

Business Rule Engines (BREs) are engineered to uphold the continuity of information and process flows, thereby enhancing decision-making even amidst unique and intricate circumstances.

Global Organizations are increasingly acknowledging the importance of Business Rule Management Systems, attributed to their capacity to Automate Decision-making Processes. A Report highlights that the present market valuation of BREs stands at \$1.3 Billion, with projections indicating a Compound Annual Growth Rate (CAGR) of 10.6% from 2022 to 2032.

Business Rule Engines assist organizations in conserving substantial amounts of Time and Mitigating frustrations that would otherwise arise from communication delays and waiting periods. It is imperative to explore the concept of Business Rule Engines and their potential contributions to organizational effectiveness.

What Constitutes a BRE?

A Business Rule Engine can be defined as a rule management system or software whose primary objective is to automate the decision-making processes inherent to various business operations.

Facilitating decision-making is essential within any organization, particularly at a granular level. For instance, delays in procurement approvals attributable to the absence of administrative personnel can result in further postponements in subsequent tasks (for example, invoicing).

The automation of such approvals, predicated on pre-established rules that align with the organization's standard operating procedures, serves to minimize unwarranted delays. Expedited decision-making further enables organizations to enhance the productivity of their workforce.

Types of BREs:

There exist three principal categories of business rule engines:

- ➡ Workflow-based.
- ➡ Logic-based.
- ➡ Coding-based.



Workflow-Based Business Rule Engine: For organizations aiming to establish a fundamental decision automation framework, this represents the most suitable alternative. This type of business rule engine operates on straightforward yes/no determinations and does not engage with more intricate scenarios.

The system can accommodate an unlimited number of users, with a limited number of designated administrators responsible for designing the workflows. These engines possess the capability to auto-fill fields, route information, manage tasks and messages, and dispatch emails.

This business rule engine can be effectively implemented for tasks such as the automatic dispatch of welcome messages to new subscribers of your email newsletters. It can also be utilized for other binary decisions within the organization.

Logic-Based Business Rule Engine: Utilizing a logic-based business rule engine can be analogized to employing Excel. The formulas utilized in Excel are inherently intuitive and fundamentally grounded in logic, this same principle is applicable to these business rule engines.

These BREs are structured to accommodate a specific degree of complexity within the decision-making framework without necessitating extensive coding. Standard employees can proficiently utilize this software to formulate their own rules by simply inputting logic into the rule-builder.

This business rule engine serves as an excellent solution for the automation of parallel processes or the development of digital forms.

Coding-Based Business Rule Engine: The coding-based BRE is comparable to Robotic Process Automation (RPA). By leveraging programming languages, sophisticated codes are crafted, which dictate the complex rules that a BRE system must adhere to in order to automate any decision-making process.

These engines function similarly to bots that swiftly probe the database for relevant information and can assist in decision-making. Such business rule engines are not intended for the regular employee to construct.

Engagement of a proficient developer is required to articulate the objectives of this automation tool, in order to design a BRE capable of managing complex decisions.

These BREs prove invaluable in the finance sector, where the manual examination of numerous invoices from multiple vendors can be excessively burdensome.

Examples of BREs:

Business Rule Engines operate on predefined rules and logic to automate a multitude of decisions for organizations on a daily basis. However, the business logic and rules applicable to one entity may not be transferable to another, as each organization possesses its own distinct processes.

★ Within the Health Insurance Industry, Companies can employ Business Rule Engines to evaluate and determine clients' eligibility for insurance coverage. Given that individual health conditions can modify insurance terms, automating this facet of decision-making considerably conserves time.

★ In the Retail Sector, Business Rule Engines can monitor customer eligibility for various discount tiers. For instance, if a Retail Establishment offers a 30% Discount on Purchases amounting to ₹ 3,000, while providing only a 5% Discount for Transactions below that threshold, Eligibility Rules can be effortlessly established, allowing the engine to manage the remainder.

★ Another pertinent Example can be found in the Financing Sector. Different Categories and amounts of Loans necessitate distinct documentation requirements. Business Rule Engines can proficiently automate the assessments of eligibility and document completeness, thereby alleviating the burden on human resources from clerical responsibilities.

Benefits of BREs:

Business Rule Engines present Four Principal advantages that contemporary enterprises cannot afford to overlook. It is critical to expedite internal processes through efficient and prompt decision-making that is not encumbered by avoidable delays.

Enhanced Compliance: An enterprise must diligently monitor both internal policies and external regulations pertinent to its operational processes.

For instance, in the context of consumer privacy protection, there exists the General Data Protection Regulation (GDPR) along with potentially corresponding corporate policies concerning the management of sensitive consumer data within the organization.

An automated business rule engine guarantees that internal processes adhere to the prescribed regulations,

legal statutes, and relevant policies, thereby safeguarding the organization from significant penalties.

Reduction of Manual Intervention: The financial burden of repetitive tasks for an organization can reach as high as \$5 trillion annually. Given this reality, it is judicious to minimize manual decision-making wherever feasible through the implementation of business rule engines for automation.

Business rule engines facilitate the management of repetitive functions integral to the decision-making process, including but not limited to document routing, application screening, confirmations, and rejections, thereby conserving human resources for more complex tasks.

Elimination of Intermediaries: The decision-making process is characterized by significant interaction between authorized individuals, typically occurring across various departmental boundaries.

This process frequently necessitates the involvement of an intermediary who serves as a liaison among the professionals engaged in the decision-making process. Such a system is often cumbersome and marked by inefficiency.

Utilizing a business rule engine allows for the automation of routing, thereby obviating the necessity for intermediaries. The software systematically transmits information and documents to the appropriate recipients at optimal times, thereby expediting the decision-making process.

Enhanced Quality: Machines operate without the propensity for error. The manual routing of information and documentation is susceptible to delays and inaccuracies. The implementation of a business rule engine mitigates this risk.

By establishing explicit rules and conditions for each stage within the decision-making process, this software equips teams with the assurance to function efficiently and without complications.

When employees possess a sense of assurance, their work velocity tends to increase. This enhancement contributes to an improvement in the quality of the outcomes produced. Furthermore, it aids in mitigating the time and financial expenditures that businesses incur as a result of human errors.

In BFSI Sector:

- ✓ BREs guarantee the uniform application of business rules across all operational processes and channels. Such consistency mitigates the likelihood of errors and inconsistencies in decision-making, thereby fostering enhanced data integrity and more dependable outcomes. This is especially critical in financial transactions, where even negligible discrepancies can precipitate substantial financial repercussions. Moreover, BREs furnish a comprehensive audit trail for decisions rendered within the organization. This aspect is particularly vital in the BFSI sector, where transparency and accountability are of utmost importance. BREs have the capability to document the rules that underpin each decision, facilitating the tracking and justification of those decisions, when necessary, particularly for compliance and regulatory obligations.
- ✓ In the BFSI sector, a multitude of decisions is rendered on a daily basis, ranging from loan approvals to risk evaluations and compliance assessments. BREs automate these decision-making protocols, thereby diminishing manual interventions and the concomitant risks associated with human errors. This automation not only accelerates the decision-making process but also results in cost reductions for financial institutions. Furthermore, BREs can substantially lower operational expenditures through the automation of various processes. For instance, claims processing within the insurance domain can be automated, thereby lessening the need for manual involvement and expediting claim settlements. This advancement not only bolsters efficiency but also curtails administrative costs.
- ✓ The imperatives of security and fraud prevention are paramount for entities within the BFSI domain. In this context, BREs play a significant role in fraud detection by establishing rules that activate alerts for potentially fraudulent behaviours, such as atypical transaction patterns or unauthorized access to accounts. The early identification of fraud can prevent financial institutions and their clientele from incurring considerable losses.

Applications of BREs:

- ✿ BREs assist BFSI organizations in delivering personalized services to clientele. These systems can recommend pertinent products and services by scrutinizing customer data and transaction histories, thereby cultivating a more customized and gratifying customer experience. For example, they may propose investment opportunities, insurance products, or credit solutions tailored to customer needs and behaviours.

- ❖ Additionally, BREs can streamline customer onboarding procedures by automating identity verification, Know Your Customer (KYC) checks, and credit evaluations. This automation simplifies the account opening process, alleviating administrative burdens and enhancing the customer experience. By automating various processes, including credit scoring, loan origination, and fraud detection, BREs markedly enhance operational efficiency within the financial domain. They expedite decision-making, diminish manual tasks, and optimize resource allocation, culminating in cost savings, streamlined operations, and accelerated processes throughout the overall system.
- ❖ BREs empower institutions within the BFSI sector to swiftly develop, demonstrate, and deploy innovative financial products and services. Whether it involves the creation of customized investment portfolios, insurance solutions, or credit offerings, these engines facilitate product innovation and assist financial institutions in maintaining competitiveness in a rapidly evolving marketplace.

How do BREs Deliver Business Value?

The growth of a business is contingent upon the ability to make prompt and informed decisions, in conjunction with sound strategic planning and efficient resource allocation.

Business Rule Engines serve to enhance the automation of clerical decision-making processes, including certain intricate decisions, thereby providing increased transparency into operational workflows.

Several pivotal dimensions through which Business Rule Engines deliver value to organizations include:

- ✱ Alignment with market dynamics.
- ✱ Enhancement of customer service.
- ✱ Investigation of novel avenues for generating supplementary revenue streams.

- ✱ Increased productivity and efficiency.
- ✱ Uniform adherence to regulations, laws, and policies.

At a Granular Level, each automated decision contributes to the overall accuracy of the process.

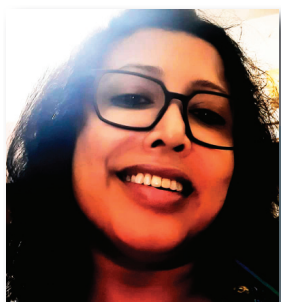
To Conclude:

A business rule engine (BRE) constitutes a specialized assemblage of both design-time and runtime software that empowers an organization to explicitly articulate, scrutinize, execute, audit, and sustain a diverse array of business logic, collectively designated as “Rules.” A BRE may be acquired as an independent entity or may be integrated within a Business Process Management (BPM). A BRE facilitates IT and / or business personnel in the formulation of rules through the utilization of decision trees, decision tables, pseudo natural language, programming-like syntax, or alternative representational methodologies. Business rule engines facilitate organizations in delegating repetitive tasks, particularly in the realm of decision-making. Several Applications of BREs within the Banking Domain i.e., Fraud detection-BREs are Capable of Establishing parameters that initiate alerts for activities deemed potentially Fraudulent, including atypical transaction trends or Unauthorized access to Accounts. Loan Application Processing-BREs facilitate the Automation of the Decision-making procedure regarding Loan Applications. Customer Onboarding-BREs enable the streamlining of Customer Onboarding Protocols. New Product Development-BREs Assist Financial Institutions in the Rapid Creation, Demonstration, and Implementation of Innovative Financial Products and Services. Regulatory Compliance-BREs contribute to the adherence of Banking Entities to Governmental Regulations. BREs are available for Standalone Purchase or may be Integrated within a Business Process Management (BPM). They are utilized to articulate Rules via Decision Trees, Decision Tables, Pseudo Natural Language, Programming-like Syntax, and various other Representation Methodologies.

References:

- a) Top 10 Business Rule Engines from different IT Companies.
- b) IBM Business Rule Engines.

Big Data: Crafting the Future of Financial Services



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Financial institutions, ranging from multinational banking corporations to emerging fintech start-ups, are increasingly accelerating the adoption of artificial intelligence (AI) and big data analytics to maintain and enhance their competitive positioning.

This article aims to examine the concept of big data analytics providing a brief overview of their key tools, processes, and procedures, and exploring their applications within the banking, financial services, and insurance (BFSI) sector.

By now most of us know that BIG DATA refers to extremely large & diverse collections of structured, unstructured & semi-structured data that continues to grow exponentially over time. Since big data generates from multiple sources including web, mobile transactions, IoT, ERP systems, publicly available data, cloud platforms, private/3rd-party data, user-generated content, as well as business transactions, hence these datasets are very huge & complex in volume, velocity, veracity, value & variety, which is why traditional DBMS cannot store, process & analyse. This underscores the necessity of inventing and

applying modern technologies to effectively analyse big data. Just as a sculptor chisel away at a block of marble to reveal a masterpiece, we must craft and employ these advanced methods to uncover valuable insights from the vast expanse of big data.

Let's start our discussion with a phenomenal case study of 2025 on Citibank group.

In the grand tapestry of financial security, Citigroup weaves a tale of innovation and vigilance. Amidst the ceaseless flow of global transactions, the bank sought a sentinel that could watch over by discerning suspicious behaviours and minimizing false alarms in real-time. Their mission: to safeguard customer accounts, uphold trust, and avert financial and reputational harm, because they have noticed that financial institutions are facing increasingly sophisticated fraud techniques including—synthetic identity fraud, phishing schemes, account takeovers, and insider threats/betrayals. The old guard of rule-based systems faltered, unable to detect the subtle patterns of modern fraud. Thus, Citigroup embarked on a transformation, shifting from reactive defences to a proactive, predictive fortress powered by Artificial Intelligence.

The Symphony of Machine Learning:

Citigroup orchestrated the integration of artificial intelligence in the form of 'advanced machine learning models' into its real-time data analytics for monitoring transactions. A key movement in this symphony was their alliance with Feedzai, a maestro in real-time risk management for financial institutions.

Key elements of this AI implementation include:

- ➔ **Real-Time Transaction Scanning:** Feedzai's platform processes thousands of data points per second across billions of dollars in transactions. Its AI models scrutinize transaction amounts and device fingerprints across the globe.
- ➔ **Behavioral Biometrics:** The system, an astute observer, evaluates individual customer behaviour—typing speed, device usage patterns, and geographic consistency over time—to compose a risk score for each transaction.
- ➔ **Anomaly Detection & Fraud Pattern Recognition:** ML algorithms, ever vigilant, compare ongoing transaction patterns to historical ones, identifying outliers that may signal fraud. These patterns evolve, adapting to new fraud trends as they emerge.
- ➔ **Adaptive Learning:** The AI system continuously assimilates knowledge from newly labelled fraud cases to enhance its predictive accuracy. This iterative feedback mechanism ensures the system's evolution, enabling it to detect previously unobserved fraudulent tactics.

➔ **Integration with Human Analysts:** While the AI system undertakes the primary role in detection, transactions flagged as suspicious are subsequently reviewed by compliance officers. This process ensures a balanced integration of human oversight and accountability.

Thus, Citigroup moved from its rules-based analysis systems to Big Data Analytics by embracing intelligent, adaptive AI-driven models. The concluding section of this article details the remarkable benefits that Citigroup reaped from this unparalleled strategic initiative of harnessing big data analytics, showcasing a transformative journey that set new benchmarks in the financial industry.

What is Big Data Analytics?

BIG DATA Analytics is the use of various processes & technologies including AI & ML, which combine & analyse massive datasets for developing actionable insights and to draw conclusions about the content of the data. It makes faster, better, data-driven decisions that can increase efficiency, revenue, profits. The primary goal of data analytics is to support decision-making by providing actionable insights.

Types of data analytics: There are four main types of data analytics - **Descriptive, Diagnostic, Predictive and Prescriptive**. Descriptive analytics answers "What happened?" Diagnostic analytics explores "Why did this happen?" Predictive analytics looks at "What could happen next?" and Prescriptive analytics addresses "What should we do next?"

Understanding the **What, Why, When, Where and How** of your data helps drive analytics maturity.



BFSI (banking, financial services, and insurance) organizations manage vast volumes of data. Leveraging this data through advanced analytics can unlock valuable business insights, enhance customer experiences, identify new revenue opportunities and respond effectively to evolving customer needs. To achieve these, firms must extract and integrate insights from data dispersed across by:

- Using front-to-back insights – correlating data across applications, functions, processes, controls, and event lifecycles.
- Adopting predictive operations – combining historical data with current market intelligence to forecast future trends.
- Enabling zero-touch data operations – applying statistical and ML techniques to profile and correlate front- and back-office data for automated insight generation.

The transformation of raw data into actionable insights involves a series of structured stages:

i. Data Collection - The initial phase entails aggregating data from diverse sources. Organizations refine their data acquisition strategies to consolidate inputs into centralized repositories such as data lakes, which can automatically assign metadata to enhance accessibility and governance.

ii. Data Processing - Once collected, data must be systematically extracted, transformed, and loaded into appropriate storage systems to ensure analytical accuracy.

iii. Data Cleaning - Data must undergo rigorous cleaning to ensure relevance and integrity because clean data is essential to prevent analytical distortion and to uphold the reliability of insights derived. This step includes formatting corrections, removing duplicates and eliminating extraneous or erroneous records.

iv. Data Analysis - Advanced analytical techniques are applied to the processed and cleansed data to uncover meaningful patterns, relationships, and trends. These include data mining, predictive analytics, machine learning, including deep learning & NLP. Each method contributes to a robust foundation for strategic decision-making:

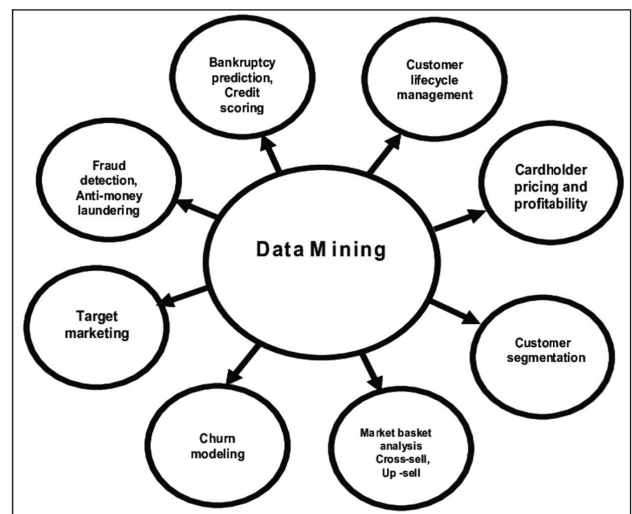
- Data Mining identifies latent structures and associations within large datasets.

- Predictive Analytics forecasts future developments based on historical trends.
- Deep Learning simulates human cognition through multi-layered neural networks,
- Additionally, Natural Language Processing (NLP) models empower machines to comprehend, interpret, and generate human language.

Next, we will examine each of these methods in a concise yet comprehensible manner.

I. Data mining is the process of searching for a large batch of raw data and analyzing them to identify patterns and extract useful information. It is a foundation for predictive analysis. Data mining aids financial institutions in managing compliance by automating monitoring, identifying potential violations, and producing regulatory reports.

The following diagram shows the application of Data mining In BFSI sector



Steps involved in implementation of data mining process tool:

- i. Business understanding** – The first step in data mining process is identifying the problem to be solved and defining the project's objectives. This includes clarifying the business problem, outlining goals, and establishing key performance indicators (KPIs) to measure success.
- ii. Data collection** - It covers recognizing data sources, collection of data and exploring patterns and relationships. This step is crucial to ensure that enough and suitable data is available for analysis.

iii. Data preparation – This step involves cleaning errors, transforming data for analysis, and integrating data from various sources to create a unified dataset.

iv. Modelling – This is the process of creating a predictive model that entails selecting a suitable algorithm, training the model with data and assessing its performance. This step is crucial as it forms the core of data mining and aims to develop a model that can effectively predict outcomes with new data.

v. Testing & Evaluation – This step involves assessing the

model's performance to confirm the model's reliability and real-world applicability by using statistical measures. It is needed to determine its predictive accuracy on new data.

vi. Deployment – This is the last step in the implementation process of a data mining tool. It involves implementing the model in a production environment, integrating it with existing systems for real-time predictions. This step is crucial as it allows the model to be utilized practically, generating value for the organization.

USE CASES SHOWING FINANCIAL BENEFITS OF APPLYING DATA MINING IN BANKS & FINANCIAL INSTITUTIONS

Cost reduction:

Automated processes reduce operational expenses. JPMorgan Chase reported saving 360,000 hours of manual work annually through data mining and automation (JPMorgan Chase, 2021).

Improved decision-making:

Data-driven decisions lead to better outcomes. Funds using advanced data mining techniques have outperformed traditional approaches by 3-5% annually on average (S&P Global, 2022).

Enhanced customer experiences:

Personalized services increase customer retention. Banks implementing data-driven personalization have seen a 10-15% increase in customer lifetime value (Boston Consulting Group, 2022).

Reduced losses:

Better risk management and fraud detection directly impact the bottom line. Wells Fargo reported a 60% reduction in fraud losses after implementing advanced data mining techniques (Wells Fargo, 2021).

II. Predictive Analytics

Predictive analytics represents a sophisticated branch of data analytics focused on forecasting future events or behaviours. It utilizes historical datasets to forecast future outcomes, employing a diverse array of modelling approaches tailored to specific analytical objectives.

Predictive Analytics Techniques:

✳ **Classification Models** - These models are designed to assign data points to discrete categories or classes. They are particularly effective in scenarios requiring binary or multi-class predictions, such as fraud detection or customer segmentation. Common techniques include Logistic Regression, Decision Trees, Random Forests, and Support Vector Machines.

✳ **Regression Models** – These are utilized for estimating continuous variables, regression models establish relationships between dependent and independent variables. They are instrumental in forecasting metrics such as sales volume or credit risk scores. Representative methods include Linear Regression, Multiple Regression, and Polynomial Regression.

✳ **Clustering Models** - Clustering algorithms identify inherent groupings within datasets by analysing similarities among data points. These unsupervised models are valuable for market segmentation & anomaly detection. Notable examples include K-Means Clustering and Hierarchical Clustering.

✳ **Time Series Models** - These models specialize in analysing temporal data to predict future values based on historical trends and seasonality. They are widely applied in financial

forecasting. Key methodologies include Autoregressive Integrated Moving Average (ARIMA) and Exponential Smoothing.

Use Cases of Predictive Analytics in Banking	Description
Fraud Detection	Machine Learning models assign risk scores to transactions, improving accuracy and reducing false positives.
Credit Scoring	Enhances traditional models and enables scoring for borrowers without credit history.
Risk Management	Forecasts macroeconomic shifts, liquidity needs, system failures, and compliance risks.
Customer Experience	Enables hyper-personalized services, targeted marketing, and churn prediction.
Financial Decision Making	Identifies profitable investment opportunities and optimizes product offerings.

III. Artificial Neural Networks (ANNs) represent a sophisticated class of predictive modelling techniques inspired by the intricate architecture and functionality of the human brain. As a subset of ML, specifically within the realm of deep learning, ANNs enable computers to process data in a manner akin to human cognitive processes. This is achieved through a network of interconnected nodes, or neurons, organized in a layered structure that mirrors the neural networks of the human brain.

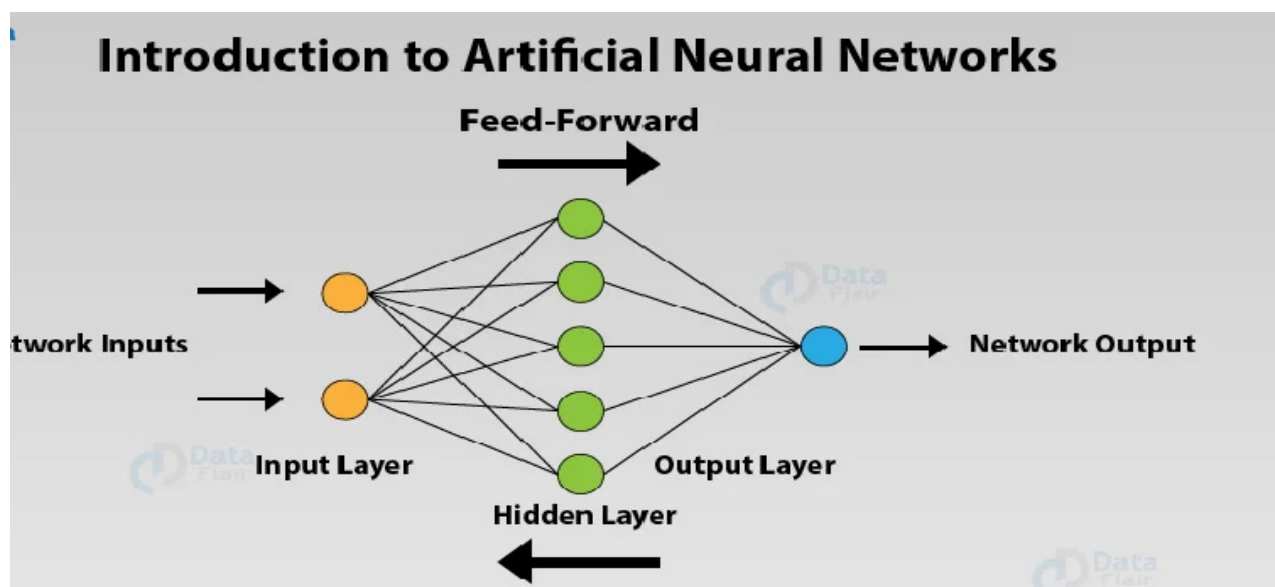
Key Components of an ANN:

1. Input Layer: This is where the n/w receives information e.g.

in an image recognition task, the input is an image.

2. Hidden Layers: These layers process the data received from the input layer. The more hidden layers are there, the more complex patterns the network can learn and understand. Each hidden layer transforms the data into more abstract information.

3. Output Layer: This is where the final decision or prediction is made. For example, after processing an image, the output layer might decide whether it's a cat or a dog.



Financial applications of Artificial Neural Network:

A. Credit Scoring: Neural networks offer marked advantages over linear models used for credit scoring (e.g., logistic regression), particularly when processing large, heterogeneous, and non-linearly separable data—such as payment history, transaction patterns, and time-varying behavioral indicators.

B. Fraud Detection: The complexity and velocity of digital financial transactions expose institutions to ever-evolving risks of fraud, including credit card abuse, identity theft, and money laundering. Neural networks significantly enhance the fraud detection arsenal, especially with the deployment of graph neural networks (GNNs) that model interdependencies across accounts, transactions, devices, and third parties. ANN flags suspicious patterns in real-time across millions of transactions.

C. Algorithmic Trading: Algorithmic trading leverages automated systems to execute buy and sell orders at speeds and analyses unmatched by human traders. Deep learning—particularly LSTM and CNN models—has achieved notable success in predicting price trends, regime changes, and constructing adaptive trading strategies using unstructured news, historical prices, and

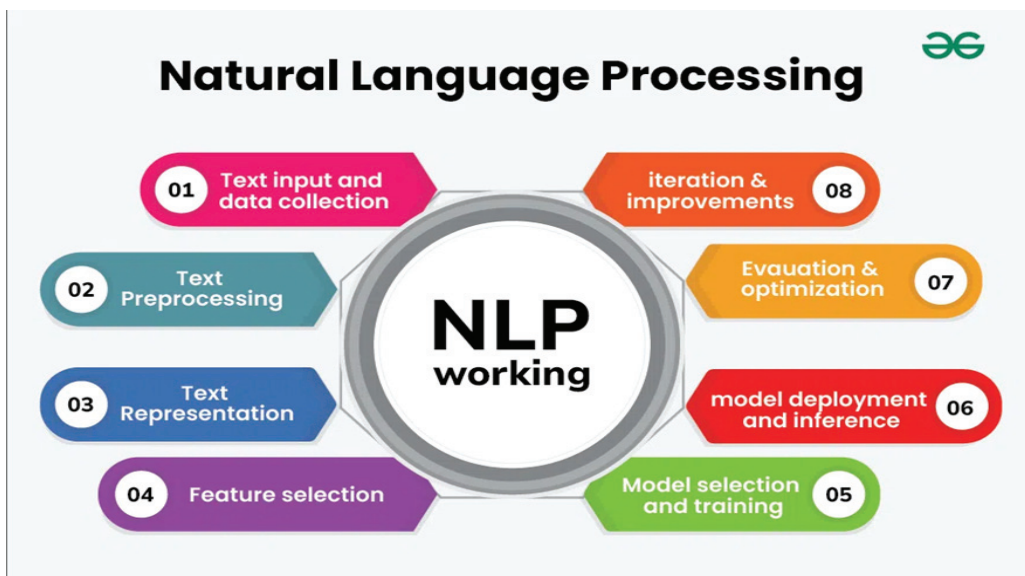
technical indicators.

D. Customer Segmentation: Traditional customer segmentation relies heavily on demographic and transactional clustering. Neural networks, through both feedforward and recurrent structures, enable far finer granularity—so-called micro-segmentation—by extracting nonlinear behavioral patterns and temporal profiles from massive customer databases.

E. Risk Management: The management of market, credit, and operational risks is fundamentally improved by neural network deployment through

- Real-time monitoring: Neural models enable dynamic adjustment to new risk inputs, facilitating rapid response to evolving market and credit conditions.
- Scenario analysis and stress testing: Deep risk models simulate extreme market scenarios, supporting robust capital planning and regulatory compliance efforts.
- Anomaly detection: Outlier detection is greatly enhanced, providing early warnings for previously unseen risk exposures or market anomalies.

IV. Natural language processing - Natural language processing (NLP) is a field of artificial intelligence that allows computers to understand, generate, and manipulate human language.



Usage of NLP in BFSI sector:

1. Chatbots and Virtual Assistants: Chatbots and virtual assistants powered by NLP improve customer

interactions, especially in the BFSI sector by managing routine banking queries. Many banks have adopted NLP-driven chatbots to manage basic customer inquiries,

allowing human agents to concentrate on more complex problems. This automation results in quicker response times and reduced operational costs due to the decreased need for resources to handle large volumes of interactions.

- 2. Machine Translation:** Machine translation tools like Google Translate eliminate communication barriers, allowing banks to serve diverse customers effectively.
- 3. Text Summarization:** NLP systems can condense extensive texts into summaries, aiding financial institutions in document review and decision-making.
- 4. Loan Application Fraud Detection:** Additionally, NLP analyses loan applications to detect fraud, enhancing security for banks.
- 5. Document Classification:** It automates document

classification, improving efficiency in processing paperwork.

- 6. Claims Processing:** In insurance, NLP streamlines insurance claim processing by extracting data quickly, enhancing customer experience.
- 7. Customer Sentiment Analysis:** It is essential for BFSI companies to understand customer sentiment with an aim to stay competitive. Sentiment analysis, using NLP, helps assess customer feedback from multiple sources such as social media and surveys, revealing insights into how the public perceives products and services.
- 8. Personalization:** Personalization has become important for BFSI organizations. By examining customer communications and transaction histories, NLP systems can provide personalized recommendations for financial products and services.

Use cases showing the application of NLP in BFSI industry

Reduction in False Positives: AI models have drastically

Erica	Bank of America	Personalized insights, monitors spending, sends bill reminders, helps with transactions and bill payments, replaces lost/stolen cards
Eno	Capital One	Provides account information, monitors transactions for suspicious activity, helps with bill payments, offers spending insights
EVA	HDFC Bank	Helps customers find information on products and services, answers banking-related queries
ASK-IIFL	IIFL Finance Limited	Handles customer support queries related to trading reports, balance inquiries, brokerage calculations
Amy	HSBC	Provides instant answers to customer queries in multiple languages, handles basic transactions

Conclusion:

Finally, let's now explore how Citigroup benefited from utilizing big data analytics, as detailed at the beginning of this article:

- 1. Faster Detection Times:** Fraudulent transactions that may have previously gone unnoticed for hours or even days are now flagged in real time, allowing immediate intervention.

reduced the number of legitimate transactions mistakenly identified as fraud, improving customer satisfaction and reducing operational costs.

- 2. Enhanced Risk Scoring:** Citigroup now benefits from much more granular and accurate fraud risk scores per transaction, allowing better prioritization of high-risk alerts.



3. Scalability Across Regions: AI has enabled Citigroup to apply uniform fraud detection models across its global network, enhancing compliance and customer protection across different regulatory environments.

3. Cost Savings: By automating parts of the fraud detection workflow, Citigroup has significantly reduced reliance on manual review teams and legacy systems, translating into millions of dollars in operational savings.

Nevertheless, these capabilities introduce new model risk, emphasizing the need for rigorous governance, transparency, and validation as highlighted by global regulatory bodies. Policymakers and supervisory authorities across diverse jurisdictions—including the Asia-Pacific region, USA, and the EU—are actively formulating and implementing regulatory frameworks aimed at safeguarding consumers, mitigating money laundering risks, and preserving systemic financial stability.

In 2023, a major bank launched an AI-based fraud detection system that was like a high-tech security guard, catching fraudulent transactions with remarkable precision. However, this vigilant guard overlooked the rules of the land, specifically the European Union's General Data Protection Regulation (GDPR), by processing personal data without proper consent mechanisms. This misstep led to a €50 million fine and a significant public

relations crisis, akin to a fortress crumbling under the weight of its own defences. Similarly, stablecoin issuers have faced regulatory scrutiny for not meeting anti-money laundering (AML) and know-your-customer (KYC) requirements, resulting in some projects being halted before they could scale, like ships stopped at the harbour before setting sail. These instances highlight a crucial lesson: innovation without adherence to compliance standards, is like building a castle on sand – destined to collapse.

The ongoing fintech transformation is therefore not solely a matter of technological innovation but is fundamentally underpinned by the imperative of trust. It further necessitates the design and implementation of systems that are not only technologically advanced but also transparent, auditable, and equitable.

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Banking on Machine Learning in the Age of India's DPDP Act, 2023



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The Indian banking sector is standing at a fascinating crossroad. On one side, there is the explosive growth of machine learning (ML) and artificial intelligence (AI), driving innovation in fraud detection, credit scoring, chatbots, and personalized banking. On the other side, the **Digital Personal Data Protection (DPDP) Act, 2023** has entered the scene, creating a strong legal framework for how personal data can be collected, stored, and processed.

For banks, this is more than just compliance. It is about rethinking how customer data is handled in the era of ML, where algorithms thrive on information but regulators demand privacy and accountability. This article explores how the DPDP Act will impact the use of ML in the financial sector, with real world illustrations from institutions like **SBI** and **Paytm**, and practical insights into what lies ahead.

A quick refresher: What is the DPDP Act, 2023?

India's **DPDP Act, 2023** is the country's first comprehensive law on personal data protection. Modelled in some ways after the **EU's GDPR**, it sets out rules for:

Consent based data usage: Banks and financial firms must clearly explain why data is being collected and how it will be used.

- **Right to correction and erasure:** Customers can demand correction or deletion of their data.
- **Data fiduciaries:** Organizations handling data must act as "fiduciaries," meaning they are trusted custodians with obligations of fairness.
- **Significant Data Fiduciaries (SDFs):** Larger organizations, such as big banks, will fall under this category and face stricter obligations, including appointing Data Protection Officers (DPOs) and conducting independent audits.
- **Cross border data flow:** Personal data can only be transferred abroad to "trusted" countries approved by the government.

For banks and fintech companies, this is a gamechanger. Unlike retailers or social media apps, financial institutions deal with highly sensitive information income, spending habits, loan history, and even biometric authentication.



Why the banking sector relies so heavily on ML

Machine learning is no longer an optional experiment in banking it is core to survival and growth.

1. **Fraud detection:** ML models analyse millions of transactions in real time to detect suspicious activities.
2. **Credit scoring:** Beyond traditional credit bureau data, ML uses alternative signals like transaction patterns, bill payments, and even mobile behaviour.
3. **Personalized recommendations:** Banks suggest loans, cards, and mutual funds tailored to customer profiles.
4. **Chatbots and virtual assistants:** AI powered tools like SBI's SIA and HDFC's EVA handle customer queries 24/7.
5. **Operational efficiency:** Automating back office processes, KYC verification, and compliance reporting.

These innovations depend on largescale data collection and processing. But this is precisely where the DPDP Act draws red lines.

The tension: ML thrives on data, DPDP restricts it

Machine learning models improve as they are fed more diverse and granular data. But the DPDP Act enforces:

- **Purpose limitation:** Data can only be used for the

specific purpose consented to.

- **Data minimization:** Collect only what is necessary, not “nice to have.”
- **Right to withdraw consent:** Customers can revoke access at any time.

This means that banks can no longer build ML systems that indiscriminately Hoover up customer data. Instead, they must design with privacy by design principles.

For example, if a bank wants to use debit card spending history to train a model for credit scoring, it must explicitly inform the customer and obtain consent. If the customer later withdraws consent, the bank must delete or anonymize that data even if it affects the accuracy of the model.

Case Example 1: SBI's Chatbot SIA under DPDP

The State Bank of India (SBI) introduced its AI powered chatbot SIA to handle customer queries ranging from balance checks to loan eligibility. It processes thousands of conversations daily, which are valuable for improving natural language models.

Under the DPDP Act, several changes come into play:

- **Transparent data collection:** SBI must clearly tell customers that their chat conversations may be stored and used for training.



- **Right to erasure:** If a customer asks for deletion of chat history, SBI must comply even if that data helps improve the model.
- **Data fiduciary obligations:** As an SDF, SBI must appoint a Data Protection Officer and conduct regular audits of SIA's data handling.

This could push SBI to redesign SIA so that training happens on anonymized conversation data or synthetic datasets rather than raw customer logs.

Case Example 2: Paytm's Fraud Detection Models

Paytm, one of India's largest digital payments platforms, uses ML for fraud detection. The system scans transaction velocity, device fingerprints, and geolocation to flag suspicious behaviour.

With DPDP in place:

- **Consent is mandatory:** Paytm must ensure users explicitly allow the use of location and device data.
- **Explainability:** If a transaction is blocked, users have the right to know why.
- **Vendor accountability:** If Paytm shares data with a third party analytics provider, it is still responsible for any misuse.

This might push Paytm toward federated learning, where fraud detection models are trained on device, and only patterns not raw data are shared.

Opportunities created by DPDP for ML in Banking

While the Act introduces restrictions, it also opens doors for innovation:

- **Privacy preserving ML:** Techniques like federated learning, differential privacy, and homomorphic encryption will gain traction.
- **Explainable AI (XAI):** Since customers now have the right to know why decisions are made, banks will invest in models that are transparent and interpretable.
- **Data localization:** With cross border restrictions, India based cloud providers could see a boom as banks keep data within the country.
- **Customer trust as a differentiator:** Banks that demonstrate respect for privacy may build stronger long

term relationships.

Challenges ahead

- **Cost of compliance:** smaller banks may struggle with audits, DPO appointments, and redesigning ML systems.
- **Trade off with accuracy:** Removing data or anonymizing it may reduce model performance.
- **Legacy systems:** Many banks still rely on outdated IT infrastructure not built for dynamic consent management.
- **Talent gap:** Privacy preserving ML is still a niche skill set in India.

The road ahead: Building trust through responsible ML

The DPDP Act is not the end of innovation it is a reset button. Banks that treat it as a compliance burden may fall behind, but those that see it as an opportunity to build trust, transparency, and resilient ML systems will thrive.

Imagine a future where:

- SBI's chatbot can answer queries without storing personal history.
- Paytm's fraud detection works through federated learning, never exposing raw transaction logs.
- Loan approvals are explained in plain language, not just a mysterious "AI score."

That future aligns both with ML innovation and the spirit of the DPDP Act.

Conclusion

The banking sector in India is undergoing a dual transformation technological through machine learning and regulatory through the DPDP Act, 2023. The two forces may seem at odds, but in reality, they can complement each other.

Machine learning needs trust to succeed, and trust comes from strong data protection. By adopting privacy preserving techniques, transparent consent management, and explainable AI, banks like SBI, Paytm, and others can lead the way into a future where technology and regulation walk hand in hand.

The DPDP Act is not about slowing down innovationist's about ensuring that in the race for smarter banking, customers don't lose their right to privacy.

AI/ML-Driven Resilience: Redefining Business Continuity and Disaster Recovery



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In today's digital economy, even brief service disruptions can lead to financial losses, regulatory concerns, and reputational damage. Traditional approaches to business continuity and disaster recovery have been built around static plans, manual monitoring, and scheduled testing. While these methods have provided stability for decades, they are increasingly inadequate against the scale and unpredictability of modern threats such as cyberattacks, cloud outages, and complex interdependencies. Artificial Intelligence and Machine Learning are now emerging as game changers, enabling organizations to move from reactive recovery toward proactive resilience.

The strength of AI/ML lies in predictive capability. By analyzing years of incident logs, infrastructure telemetry, and real-time performance data, machine learning models can identify patterns that signal impending failure. Hardware degradation, abnormal transaction spikes, or early indicators of a cyber-intrusion can be detected long before traditional monitoring

tools would have raised alarms. This ability to forecast risks gives organizations the crucial time needed to take preventive action, significantly reducing downtime and operational impact.

Automation is another area where AI/ML reshapes continuity. Intelligent monitoring systems, powered by anomaly detection and correlation engines, can instantly flag deviations across applications, networks, and databases. Instead of waiting for human intervention, automated workflows can trigger corrective measures—rerouting traffic, activating redundant servers, or initiating failover protocols. This shortens both the time to detect and the time to recover, ensuring services remain available with minimal disruption.

Disaster recovery processes are also being redefined through AI. Rather than relying on rigid backup and restoration routines, AI-driven tools dynamically prioritize workloads based on criticality. During an outage, essential services such as payment systems or authentication modules can be restored first, while less critical processes follow later. The use of digital twins, or virtual



replicas of infrastructure, further strengthens preparedness by simulating disaster scenarios and testing the resilience of recovery strategies under real-world conditions.

The business value of AI/ML-driven resilience extends well beyond technology. Automated continuity safeguards customer trust by keeping services uninterrupted. Optimization of resources reduces the cost of maintaining heavy redundant infrastructure. Data-driven insights also help institutions align with growing regulatory demands for operational resilience, ensuring compliance while strengthening governance.

At the same time, challenges remain. AI systems depend on quality data and must be free from algorithmic bias to avoid

blind spots. Lack of explainability in decision-making can hinder regulatory acceptance. Strong governance frameworks, transparent model validation, and a balance between automation and human oversight are therefore essential to ensure trust in AI-enabled continuity.

AI and ML are no longer supportive tools but central forces shaping the future of business continuity and disaster recovery. They allow organizations not just to restore operations after disruptions but to anticipate, withstand, and adapt in real time. In doing so, they transform resilience from a reactive safeguard into a proactive capability, redefining how businesses prepare for uncertainty in the digital age.

Digital Acceleration and Cybersecurity in Indian Private Banks: Balancing Innovation with Resilience



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Abstract

The Indian private banking sector has experienced an unprecedented digital transformation, driven by artificial intelligence (AI), cloud computing, open banking APIs, and government initiatives like Digital India and UPI (Unified Payments Interface). While digital acceleration has improved efficiency, inclusion, and customer experience, it has simultaneously expanded the cybersecurity threat landscape. This paper examines the dual challenge of sustaining digital innovation while ensuring cyber resilience. Using empirical data,

regulatory frameworks, and illustrative case studies from HDFC Bank, ICICI Bank, Axis Bank, Kotak Mahindra Bank, and emerging private banks, this study highlights current vulnerabilities, threat typologies, and proactive mitigation strategies. The paper proposes a comprehensive framework integrating technological, organizational, and behavioral controls to balance innovation with resilience.

Keywords

Digital banking, cybersecurity, private banks, UPI, fraud, RBI, India, innovation, risk management

1. Introduction

The Indian banking ecosystem has undergone a profound shift from traditional operations to digital-first models. Private banks, due to their agility and

technological investments, have become pioneers of this digital revolution (RBI, 2024). Digital acceleration has been accelerated by the COVID-19 pandemic, which underscored the importance of contactless banking and remote financial services.

According to the **Reserve Bank of India (RBI, 2024)**, private sector banks accounted for over **52% of total digital transactions** in FY2024, with a corresponding **35% increase in cybersecurity incidents**. As transactions shift online, the attack surface widens, creating challenges in maintaining data confidentiality, integrity, and availability.

This paper examines the paradox of digital acceleration: how banks can simultaneously pursue innovation while protecting customers, assets, and reputation.

2. Theoretical Framework

Two theoretical lenses frame this study:

- **Technology Acceptance Model (TAM):** Suggests that perceived usefulness and ease of use drive adoption (Davis, 1989). In banking, digital platforms must be efficient and secure to gain customer trust.
- **Digital Trust Theory:** Trust is a key determinant of customer engagement in digital banking (Gefen et al., 2003). Trust is influenced by cybersecurity, data privacy, and service reliability.

By integrating these theories, we argue that digital innovation and cybersecurity are interdependent rather than opposing objectives.

3. Drivers of Digital Acceleration

3.1 Fintech Integration

Private banks increasingly collaborate with fintech startups for enhanced service delivery. Examples include HDFC Bank partnering with **Paytm** and **Cred**, and Kotak Mahindra Bank leveraging **Razorpay APIs** for SME payments. These partnerships improve speed and convenience but introduce third-party risk.

4. Cybersecurity Challenges

Digital acceleration inherently increases the **cyber attack**

3.2 Artificial Intelligence and Machine Learning

AI powers fraud detection, credit scoring, and customer engagement. For example, ICICI Bank's **iPal chatbot** handles over **6 million customer queries per month**. AI helps identify anomalous patterns but relies on secure data pipelines, making cybersecurity critical.

3.3 Cloud and API Banking

Cloud migration enables scalable digital infrastructure. Axis Bank migrated part of its infrastructure to **AWS Cloud**, ensuring high availability. Open banking APIs facilitate third-party integrations but require robust access control, encryption, and continuous monitoring.

3.4 Digital Payments and UPI

UPI volumes have grown dramatically, with private banks accounting for **~84% of retail transactions** by FY2024 (RBI, 2024). This scale accelerates innovation but amplifies exposure to phishing, vishing, and fraudulent transactions.

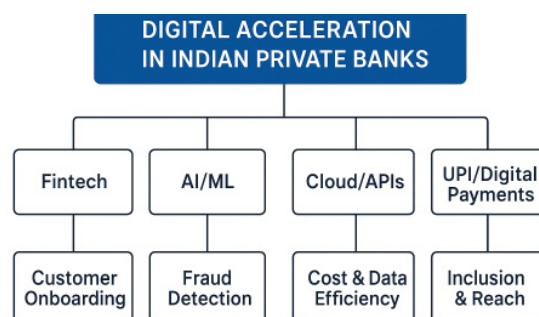


Diagram 1: Digital Acceleration Framework

This conceptual map illustrates how key pillars collectively drive digital acceleration.

surface, including mobile apps, servers, ATMs, APIs, and cloud infrastructure.

4.1 Threat Typologies

Threat Type	Description	Impact
Phishing & Social Engineering	Fraudulent emails/SMS mimicking banks	Data theft, financial loss
Ransomware & Malware	Attacks on ATMs, apps, servers	Operational disruption, ransom payments
Insider Threats	Data misuse by employees or vendors	Reputational damage, regulatory fines
API Vulnerabilities	Exploitation of fintech/partner APIs	Unauthorized transactions, fraud

CERT-In (2023) reported **1.7 million cybersecurity incidents**, with **22% affecting BFSI sector**.



Diagram 2: Digital Risk Loop

Digital Growth → Expanded Online Ecosystem → Larger Attack Surface

↑
Stronger Cybersecurity ← AI-driven Detection ← Evolving Threats
↓

Shows the interplay between digital growth and cyber risk, highlighting the feedback loop that drives the need for continuous monitoring.

5. Regulatory Frameworks

The **RBI Cyber Security Framework (Revised 2022)** mandates:

- Board-level cyber risk oversight
- Real-time threat monitoring
- Vulnerability assessments and red team exercises
- Incident response protocols and cyber drills

The **Digital Payments Security Control Directions (RBI, 2023)** mandate multi-factor authentication, transaction monitoring, and encryption standards.

Example: ICICI Bank's **Cyber Fusion Centre** integrates AI-based threat detection with real-time response, aligning with RBI's directives.

6. Case Studies

6.1 HDFC Bank

- Processes over **2.5 billion digital transactions annually**.
- Employs **behavioral biometrics** and AI for fraud detection.
- Partnered with **Microsoft Azure** for secure cloud operations.
- Conducts annual **cyber war-gaming exercises** with third-party auditors.

6.2 Axis Bank

- Maintains a **24×7 Cyber Security Command Centre**.
- Implements **Zero Trust Architecture**.
- Allocates **8–10% of IT budget** to cybersecurity.
- Uses AI-augmented threat intelligence platforms for

predictive defense.

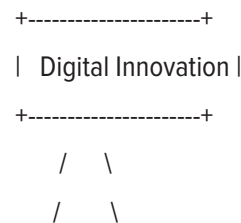
6.3 Kotak Mahindra Bank

- Adopts **privacy-by-design** in digital product development.
- Uses multi-layer encryption and real-time threat analytics.
- Runs an organization-wide **Cyber Hygiene Program**.

6.4 Emerging Private Banks

- **IDFC FIRST Bank:** AI-based anomaly detection for UPI and NEFT fraud.
- **Federal Bank:** Blockchain-based cross-border settlements and fraud mitigation.
- **Kotak 811:** Mobile-first neo-banking platform implementing continuous behavioral authentication.

Diagram 3: Cybersecurity Balance Triangle



Cyber Resilience ----- Regulatory Compliance

The triangle illustrates the necessity of balancing innovation, cyber resilience, and regulatory adherence.

7. Quantitative Analysis

Indicator	FY2022	FY2024	% Change
UPI Transactions (Private Banks)	18.6B	36.5B	+96%
Cyber Fraud Cases	9,870	13,360	+35%
IT Budget Allocation to Cybersecurity	6.5% avg	8.8% avg	+35%
Customer Cyber Awareness Programs	140 programs	310 programs	+121%

Source: RBI (2024); HDFC, ICICI, Axis Bank Annual Reports (2023–24).



These figures show that cybersecurity investment and literacy programs have increased in line with digital adoption.

8. Emerging Technologies for Cyber Resilience

Technology	Cybersecurity Function	Example
AI-driven Personalization	Fraud pattern detection	HDFC AI fraud shield
Open Banking APIs	Tokenization, encryption	ICICI Open API platform
Cloud Computing	Identity access management (IAM)	Axis Bank AWS infra
Digital Lending Platforms	Real-time risk scoring	Kotak digital lending
Blockchain	Immutable transaction ledgers	ICICI interbank settlements

Multi-Layered Defense Framework:

Today’s hyperconnected digital world, organizations face an increasingly complex threat landscape. Cyberattacks are not only becoming more sophisticated but also more persistent, targeting multiple vectors simultaneously. Traditional single-layered security measures—such as antivirus software or firewalls alone—are no longer sufficient to protect organizational assets.

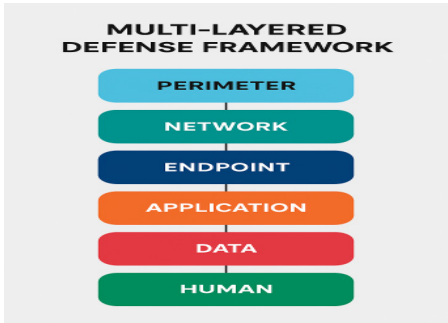
To effectively mitigate risks, enterprises adopt a Multi-Layered Defense Framework (MLDF), also known as Defense in Depth (DiD). This framework is designed to create multiple layers of security controls, both technical and procedural, to prevent, detect, and respond to potential threats at various points within an organization’s infrastructure.

Concept and Principle

The core idea of a Multi-Layered Defense Framework is that no single security control is foolproof. Each layer serves as both a barrier and a safety net, providing redundancy in case one layer fails. This approach is similar to the military strategy of defense in depth, where multiple defensive positions are established to slow down and weaken an attacker.

In the context of cybersecurity, MLDF encompasses **preventive, detective, and corrective measures** spread across different layers of technology, processes, and people. By overlapping these controls, organizations reduce the likelihood of successful attacks, minimize potential damage, and enhance incident response capabilities.

Key Layers in a Multi-Layered Defense Framework



A robust MLDF is structured in hierarchical or interdependent layers, typically categorized into **perimeter, network, endpoint, application, data, and human layers**.

1. Perimeter Security

Perimeter security forms the first line of defense, focusing on the boundary between the internal network and the external world. This layer aims to filter traffic, prevent unauthorized access, and block malicious activities. Common components include:

- **Firewalls:** Control incoming and outgoing network traffic based on predefined rules, blocking potentially harmful traffic.
- **Intrusion Detection/Prevention Systems (IDS/IPS):** Monitor network traffic for suspicious activity, alert administrators, and prevent attacks in real-time.
- **Network Access Control (NAC):** Ensures that



only authorized devices can access the network, enforcing compliance with security policies.

While perimeter security is crucial, it cannot prevent all threats, especially insider attacks or malware that bypasses traditional network boundaries. Hence, subsequent layers are necessary.

2. Network Security Layer

Beyond the perimeter, network security focuses on protecting internal communication channels and ensuring secure data flow. This includes segmentation, monitoring, and encryption strategies:

- **Network Segmentation:** Divides the network into smaller zones to contain breaches and limit lateral movement of attackers.
- **Virtual Private Networks (VPNs):** Encrypt data traffic for remote users, preventing eavesdropping and man-in-the-middle attacks.
- **Secure Protocols:** Implementing HTTPS, SSL/TLS, and secure email protocols ensures confidentiality and integrity of data in transit.

Advanced network security also leverages **anomaly detection, behavioral analytics, and threat intelligence feeds** to detect sophisticated or zero-day attacks.

3. Endpoint Security Layer

Endpoints—laptops, desktops, mobile devices, servers—are often the primary targets for cyberattacks. Endpoint security ensures that these devices are hardened against intrusion and malware:

- **Antivirus and Anti-Malware Solutions:** Detect and remove known threats from devices.
- **Endpoint Detection and Response (EDR):** Provides real-time monitoring, threat detection, and automated response for advanced threats.
- **Patch Management:** Ensures all devices and applications are up-to-date to prevent exploitation of vulnerabilities.
- **Device Encryption:** Protects data at rest, minimizing risks if a device is lost or stolen.

The endpoint layer complements network and perimeter

security, addressing vulnerabilities closer to the user.

4. Application Security Layer

Applications are increasingly targeted by attackers to exploit software vulnerabilities or misconfigurations. Application security focuses on securing software throughout its lifecycle:

- **Secure Coding Practices:** Embedding security into software development, mitigating vulnerabilities such as SQL injection, cross-site scripting, and buffer overflows.
- **Web Application Firewalls (WAFs):** Filter and monitor HTTP traffic to detect and block malicious requests targeting web applications.
- **Regular Vulnerability Assessments and Penetration Testing:** Identify and remediate application flaws before attackers can exploit them.

By incorporating security at the application layer, organizations protect not just infrastructure but the services and processes critical to business operations.

5. Data Security Layer

Data is the most valuable asset in any organization, and protecting it is central to any defense framework. Data security involves measures to ensure **confidentiality, integrity, and availability (CIA triad)**:

- **Encryption at Rest and in Transit:** Prevents unauthorized access or tampering of sensitive information.
- **Data Loss Prevention (DLP):** Monitors and restricts the movement of sensitive data within and outside the organization.
- **Backup and Recovery:** Ensures business continuity in the event of ransomware attacks, natural disasters, or system failures.

This layer not only safeguards critical information but also helps organizations comply with regulatory requirements such as GDPR, HIPAA, or RBI guidelines in banking.

6. Human Layer (People and Processes)

Even the most advanced technology cannot defend

against human error or insider threats. The human layer emphasizes awareness, training, and governance:

- **Security Awareness Programs:** Educate employees about phishing, social engineering, and secure practices.
- **Access Management and Role-Based Controls:** Ensure individuals only have access to the resources necessary for their roles.
- **Incident Response Planning:** Establish procedures to detect, report, and respond to security incidents effectively.

This layer also includes **policy enforcement, audits, and continuous monitoring** to ensure adherence to security standards.

Integration and Synergy of Layers

The true strength of MLDF lies not just in individual layers but in their **integration and synergy**. For example:

- If malware bypasses the firewall, endpoint security or network segmentation can detect and contain it.
- If sensitive data is exfiltrated through a compromised application, DLP systems and encryption can mitigate exposure.
- If a phishing email deceives an employee, incident response procedures and monitoring can minimize damage.

This layered, overlapping approach reduces single points of failure and increases overall resilience.

Benefits of a Multi-Layered Defense Framework

1. **Resilience Against Sophisticated Threats:** Multiple defensive layers slow down attackers and reduce the likelihood of successful breaches.
2. **Redundancy:** If one control fails, others continue to provide protection.
3. **Comprehensive Coverage:** Addresses technical, procedural, and human vulnerabilities.
4. **Improved Detection and Response:** Early detection in one layer triggers alerts in others,

enabling rapid containment.

5. **Regulatory Compliance:** Facilitates adherence to industry standards and data protection regulations.

Challenges and Considerations

While MLDF is highly effective, its implementation is not without challenges:

- **Complexity:** Managing multiple layers can be operationally complex and resource-intensive.
- **Cost:** Requires investment in technology, personnel, and training.
- **Integration:** Ensuring seamless communication between layers is essential to prevent gaps.
- **Continuous Updates:** Threat landscapes evolve rapidly; all layers must be continuously updated and tested.

Organizations must adopt a **strategic, risk-based approach** to select the right mix of technologies and policies suited to their environment.

Challenges

1. **Talent Gap:** India has a shortage of ~100,000 cybersecurity professionals, affecting banks' operational readiness (NASSCOM-DSCI, 2024).
2. **Third-party Risk:** Dependence on fintech partners introduces systemic vulnerabilities.
3. **Legacy System Integration:** Aging core banking systems hinder seamless security implementation.
4. **Customer Awareness Deficit:** RBI reports indicate **68% of digital frauds** stem from human error.

Diagram 5:

Weakest Link Model

Technology → Processes → People → Vendors

↑ ↑

Strongest Link Weakest Link

Highlights that human or third-party vulnerabilities are often the weakest point in cybersecurity defense.



10. Policy Recommendations

1. **RBI Cyber Resilience Index (CRI):** Public disclosure of banks' cyber maturity.
2. **Mandatory Third-Party Audits:** Strengthen vendor risk management.
3. **National Cybersecurity Sandbox:** Shared environment for testing threat scenarios.
4. **Customer Cyber Literacy Programs:** Nationwide campaigns to reduce phishing and social engineering attacks.
5. **Data Localization and Sovereignty:** Critical financial data stored securely within India.

11. Future Outlook

The next decade will see the convergence of **AI-driven cyber defense**, **quantum encryption**, and **biometric authentication**. Banks that integrate cybersecurity as a strategic function, rather than a regulatory obligation, will lead. Collaboration among regulators, fintechs, and global cyber agencies will be key to sustainable innovation.

12. Conclusion

India's private banks exemplify the duality of digital acceleration: unprecedented innovation coupled with increased cyber risk. The future of digital banking depends on balancing these forces. Banks that embed cybersecurity into product design, invest in AI-based threat detection, and foster digital trust will not only survive but thrive in an increasingly digitized financial ecosystem.

Digital acceleration without resilience risks eroding

trust—the most valuable currency in banking. Innovation, therefore, must always be paired with strategic cybersecurity investments, regulatory compliance, and customer education.

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The Need of GenAI Based Solutions for PSU Banks in India



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The Indian public sector banking ecosystem stands at an inflection point. Public Sector Undertaking (PSU) banks, which constitute the backbone of India's financial system, are under mounting pressure to modernize, improve customer experience, and maintain competitiveness against private and digital first institutions. At the same time, rapid advances in Generative AI (GenAI) present both unprecedented opportunities and significant challenges. For PSU banks, embracing GenAI is no longer a matter of technological curiosity; it is a strategic imperative that will define their relevance in a rapidly evolving financial landscape.

Why PSU Banks Need GenAI

PSU banks cater to a vast and diverse customer base across India, ranging from metropolitan corporates to rural households. These institutions process high transaction volumes daily and operate with legacy systems that often limit agility. GenAI can directly address these limitations and enable PSU banks to:

- ✓ Enhance customer service through multilingual AI powered chatbots and voice assistants that operate round the clock.
- ✓ Automate document intensive processes such as KYC verification, loan applications, and compliance reporting, thereby reducing manual errors and turnaround times.
- ✓ Offer personalized financial advisory to individuals and small businesses based on transaction histories and behavioural insights.
- ✓ Empower employees with AI driven knowledge assistants that provide instant access to regulatory guidelines, product details, and internal processes.
- ✓ Improve operational efficiency by modernizing legacy infrastructure with intelligent automation and predictive analytics.

In short, GenAI equips PSU banks to remain inclusive, efficient, and competitive in the digital economy.



Key Use Cases of GenAI in PSU Banks

1. Customer Support and Engagement

GenAI powered assistants can resolve customer queries, simplify navigation across banking products, and reduce branch dependency. This is particularly valuable in rural areas where digital literacy may be limited but voice-based interactions can bridge the gap.

2. Fraud Detection and Risk Management

AI driven models can analyse real time transaction data to identify anomalies and generate explainable alerts for fraud prevention teams. By combining transaction intelligence with behavioural analysis, PSU banks can strengthen trust and security.

3. Credit and Loan Processing

Traditional loan evaluation is resource intensive and time consuming. GenAI can summarize financial documents, assess borrower profiles, and assist credit officers in faster decision making, while maintaining regulatory compliance.

4. Financial Literacy and Inclusion

Conversational AI tools can explain complex financial

products in regional languages, improving financial literacy and driving deeper inclusion in semiurban and rural markets—key mandates for PSU banks.

5. Employee Productivity

Internal AI copilots can act as digital colleagues, helping staff interpret RBI circulars, prepare compliance reports, or navigate internal workflows, thereby reducing dependency on manual processes.

Challenges and Risks in Adoption

The potential of GenAI is significant, but PSU banks must address certain structural challenges before largescale adoption:

- ❖ **Regulatory Compliance:** Solutions must align with RBI guidelines, SEBI norms, and India's data protection frameworks, including the DPDP Act.
- ❖ **Data Privacy and Security:** Sensitive financial data cannot be exposed to public LLMs. Deployment of private, finetuned domain models is essential.
- ❖ **Infrastructure Constraints:** Legacy IT systems in PSU banks may not support seamless GenAI integration, requiring phased modernization.
- ❖ **Skill Shortage:** Expertise in AI development,

governance, and implementation is limited and requires targeted capacity building.

- ❖ **Change Management:** Large hierarchical structures in PSU banks may resist digital transformation unless accompanied by strong leadership and cultural readiness.

The Road Ahead

The adoption of GenAI in PSU banks must be approached as a strategic transformation program rather than a technology experiment. Priority areas include:

- ❖ **Privacy Preserving AI:** Techniques such as federated learning and differential privacy will ensure compliance with regulatory frameworks while enabling innovation.
- ❖ **Explainable AI (XAI):** Transparent models that provide clear reasoning for credit approvals, fraud flags, and advisory suggestions will be critical to maintaining customer trust.
- ❖ **Collaborative Ecosystems:** Partnerships with trusted technology providers and startups can accelerate deployment while reducing costs.
- ❖ **Capacity Building:** Training programs for

employees and leadership teams will be essential to build confidence in AI enabled processes.

- ❖ **Digital Inclusion Focus:** PSU banks must ensure that GenAI solutions are not only technologically advanced but also accessible to rural and underserved populations.

By following this roadmap, PSU banks can ensure that adoption of GenAI strengthens their foundational role in India's financial inclusion agenda.

Conclusion

Generative AI is not a luxury for PSU banks—it is a necessity. As India's financial sector becomes increasingly digital and data driven, PSU banks must evolve from being traditional service providers to technology enabled enablers of inclusive growth.

By embracing GenAI responsibly, PSU banks can simultaneously improve efficiency, enhance customer trust, and fulfil their developmental mandate. Far from being a disruptive threat, GenAI represents an opportunity for PSU banks to reinforce their leadership in India's banking landscape while ensuring resilience and relevance in the decades to come.

Digital Lending

(A Way Forward)



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State Bank of India, Regional Office

“Financial Technology-Fintech-Opens Opportunities to Boost Economic Growth, especially for Financial Inclusion, but Policymakers must also address the Risks.”

-International Monetary Fund

Abstract:

Digital Lending refers to the use of technology and digital platforms to provide financial services particularly loans and advances to customers. Online lending platforms, mobile apps, and other digital channels like Paytm, Lendingkart, Paisabazaar are some of the leading digital lending platforms in India. Even Scheduled Commercial Banks (SCB's) are entered in to digital space robustly. Leading banks like SBI in the public sector lending digitally through its YONO APP in retail segment. The Indian government has been promoting digital lending to increase financial inclusion and access to credit for under-served populations,

Apart from the digital lending, platforms are enhancing healthy competition in the lending market which helps to lower the interest rates for borrowers and enhances risk management by utilizing advanced technologies such as big data, Artificial Intelligence (AI), and machine learning tools to analyse the creditworthiness of borrowers, which will help to reduce the risk of loan defaults and improve the overall efficiency of the lending process and quality lending. The transformation from traditional lending to digital lending is fast and also aggressive

practices implemented by players in the market makes digital lending available at cheaper and affordable rates to borrowers.

Digital lending in India has grown rapidly in recent years. With many new players entering the market and traditional financial institutions/banks are also adopting digital lending platforms. However, there are also concerns about the lack of proper regulation and oversight in the digital lending sector; which can lead to predatory lending practices, mis-selling and high-interest rates for borrowers. Initially, the digital lending platforms were largely unregulated due to a lack of transparency, poor control mechanism and also strict regulatory guidelines and other drawbacks of this system. Hence, the Reserve Bank of India (RBI) introduced detailed guidelines for digital lending in India to ensure consumer protection and mitigate the risks of fraud and misleading lending practices.

Abbreviations:

APR-Annual Percentage Rate.

DLAs-Digital Lending Applications/Platforms.

ICT-Information and Communication Technology.

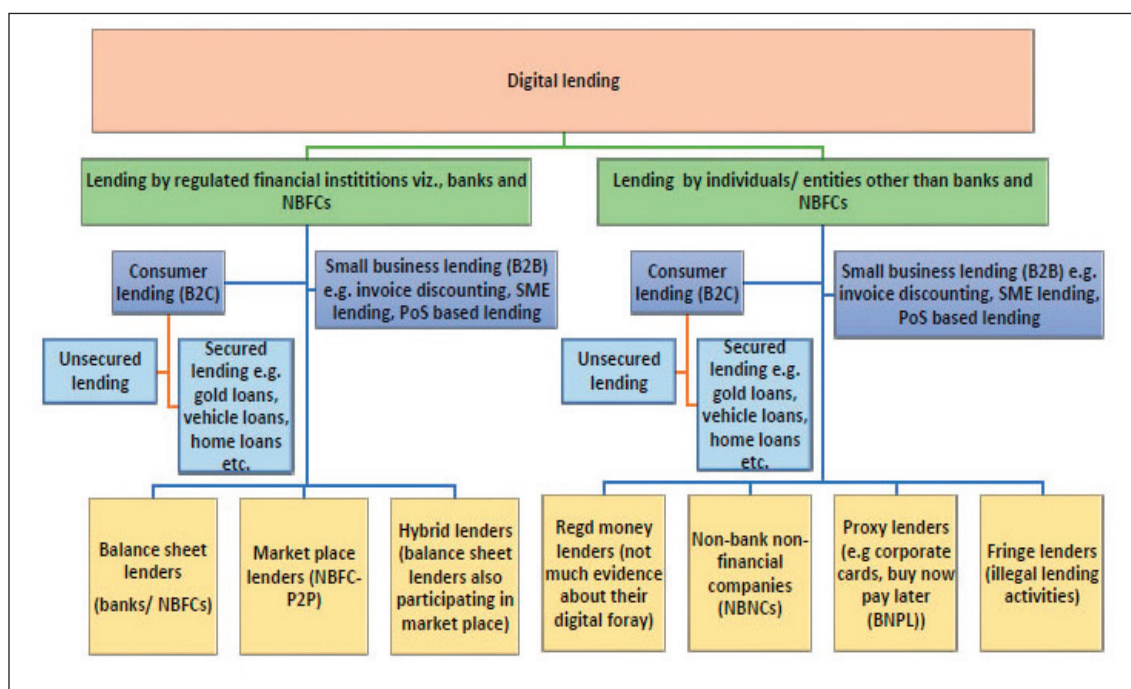
KFS-Key Fact Statement.

Reserve Bank is statutorily mandated to operate the credit system of the country to its advantage. In this endeavour, the Reserve Bank has encouraged innovation in the financial system, products and credit delivery methods while ensuring their orderly growth, preserving financing stability and ensuring protection of depositors' and customers' interest. Recently, innovative methods of designing and delivery of credit products and their servicing through 'Digital Lending' route have acquired prominence. However, certain concerns have also emerged which, if not mitigated, may erode the confidence of public in

the digital lending ecosystem. The concerns primarily relate to unbridled engagement of:

- ≈ Third parties.
- ≈ Mis-selling.
- ≈ Breach of Data Privacy.
- ≈ Unfair Business Conduct.
- ≈ Charging of Exorbitant Interest Rates, and
- ≈ Unethical Recovery Practices.

Illustration of Digital Lending Taxonomy in a Universal Context

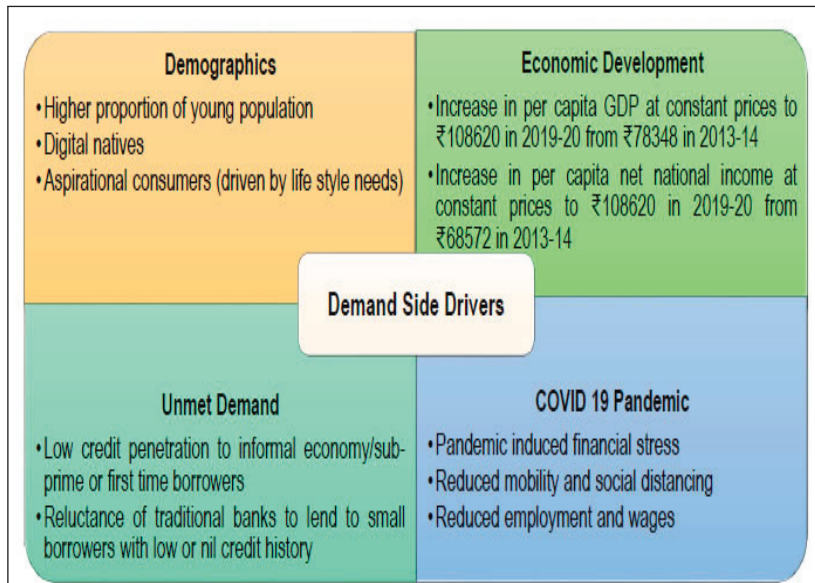


Factors Spurring Growth of Digital Lending in India:

The ubiquity of Information and Communication Technology (ICT) has affected most conventional financial products in India and created newer products. Digital lending is driven by a combination of supply-side and demand-side factors. In India, unmet credit demand of younger cohorts, low financial inclusion, technological advancements and increasing internet penetration are going to be the strong drivers.

However, trust in technology, data security and customer protection considerations will play a critical role in determining the extent of 'FinTech adoption'. India accounts for the most number of Digital Lending Applications (DLAs) in the world. India's vision towards becoming a Cash-light economy combined with the growth of public digital infrastructure and the demand for financial inclusiveness, makes it a front runner in the digital lending technology arena.

Growth Drivers have come both from ‘Demand Side’



Need for Regulation in Digital Lending Market:

Digital lending is a method of providing and collecting loans through online platforms or mobile applications, which allows for the “Quick Distribution of Loans” and saves a lot of costs that would otherwise incur in the traditional lending business. Loan Service Providers (LSPs) work with Non-Banking Financial Companies (NBFCs) to issue credit to borrowers using their platform. However, some of these platforms may engage in irresponsible lending by giving out loans that borrowers cannot afford to

repay.

Digital Lending in India has been plagued with instances of unscrupulous trade practices. Some of the Examples are:

- ✓ High interest rates.
- ✓ Hidden fees.
- ✓ Aggressive marketing tactics.
- ✓ Unauthorized access to personal data.
- ✓ Harassment and

- ✓ Intimidation.

Digital Vs. Traditional Lending:

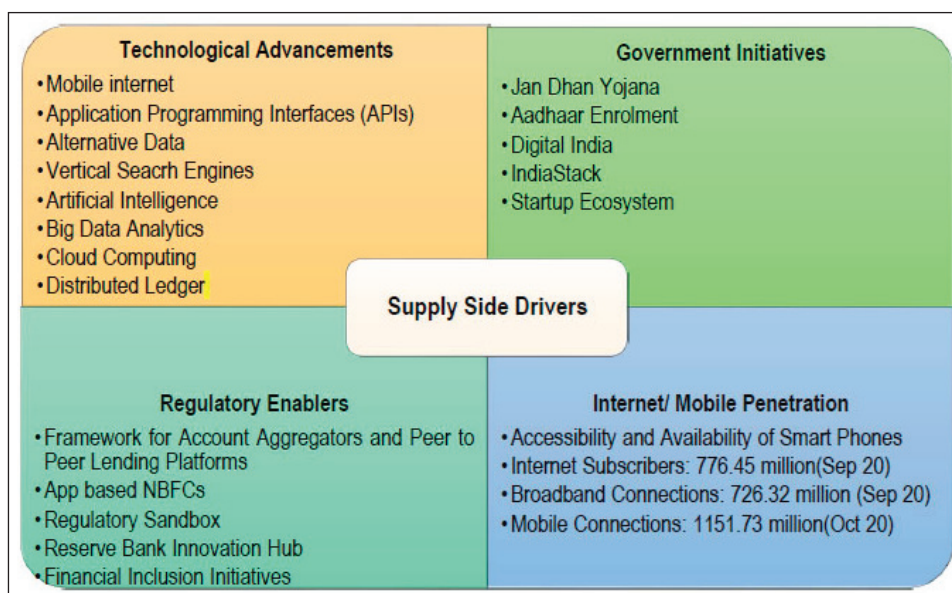
Criteria	Digital Lending	Traditional Lending
Application Process	Online applications, often with fast decision-making.	In-person applications, may take longer to approve.
Speed of Funding	Funding can be approved and transferred quickly.	Funding may take longer to process and receive.
Credit Requirements	May consider alternative data sources in addition to credit score.	Emphasis on credit score and history.
Customer Experience	Convenient, accessible, and may offer personalized experiences.	May have more limited access to products and services.

Criteria	Digital Lending	Traditional Lending
Loan Amounts	May offer smaller loan amounts or customized loan products.	Often provides larger loan amounts.
Risk Assessment	Uses technology and algorithms to assess risk.	May rely more on manual underwriting and loan officers.
Interest Rates	May offer lower interest rates due to lower overhead costs.	Rates may be higher due to traditional overhead costs.
Repayment Terms	May offer more flexible repayment terms and payment options.	Generally, more rigid repayment terms and fewer options.
Collateral	May offer unsecured loans.	May require collateral or security for loans.

Some lenders charge exorbitant interest rates, thereby exploiting the borrowers which ultimately leads to higher loan defaults. FI's (Financial Institutions) may not disclose all the fees and charges associated with their loans, making it difficult for borrowers to compare different loan products. Some lenders use aggressive marketing tactics to lure customers, while others have been accused of accessing borrowers' personal data without their consent. In extreme

cases, digital lenders have resorted to harassment and intimidation to recover their loans, making it a challenging situation for borrowers to navigate and also leads to suicidal tendency among borrowers which we observed in the recent past. That is why there existed a strong need for regulation in this market that eventually came in the form of RBI guidelines.

Growth drivers have come both from Supply Side



Customer Protection and Conduct Issues:

- All loan disbursements and repayments are required to be executed only between the bank accounts of borrower and the Regulated Entities (RE) without any pass-through / pool account of the Loan Service Provider (LSP) or any third party.
- Any fees, charges, etc., payable to Loan Service



Providers (LSPs) in the credit intermediation process shall be paid directly by RE and not by the borrower.

- A standardized Key Fact Statement (KFS) must be provided to the borrower before executing the loan contract.
- All-inclusive cost of digital loans in the form of Annual Percentage Rate (APR) is required to be disclosed to the borrowers. Annual Percentage Rate (APR) shall also form part of Key Fact Statement (KFS).
- Automatic increase in credit limit without explicit consent of borrower is to be prohibited.
- A cooling-off / look-up period during which the borrowers can exit digital loans by paying the principal and the proportionate Annual Percentage Rate (APR) without any penalty shall be provided as part of the loan contract.
- Regulated Entities (REs) shall ensure that they and the Loan Service Providers (LSPs) engaged by them shall have a suitable nodal grievance redressal officer to deal with FinTech / Digital Lending related complaints. Such grievance redressal officer shall also deal with complaints against their respective Digital Lending Apps (DLAs). The details of the Grievance redressal officer shall be prominently indicated on the website of the Regulated Entity (RE), its Loan Service Providers (LSPs) and on Digital Lending Apps (DLAs), as applicable.
- As per extant RBI guidelines, if any complaint lodged by the borrower is not resolved by the RE within the stipulated period (Currently 30 days), he/she can lodge a complaint under the Reserve Bank-Integrated Ombudsman Scheme (RB-IOS).

Steps taken by Reserve Bank of India to Strengthen Digital Lending:

Licensing of Digital Lending Platforms: RBI has

started the process of licensing digital lending platforms, which will allow them to operate as regulated entities and provide a level of oversight and accountability. Additionally, the licensing process involves several regulatory requirements that digital lending platforms must meet, including the need for them to maintain a minimum net owned fund of ₹ 2 Crores and to have a physical presence in India.

KYC and e-Signature: Reserve Bank of India's (RBI) decision to introduce e-KYC and e-Signature for digital lending has been a game-changer for the lending industry. This move has not only simplified the process but also made it more convenient for customers to access loans. By leveraging digital technologies, lenders can now complete the KYC process quickly and securely, without the need for physical documentation or in-person meetings which ultimately avoids impersonation. This has not only made it easier for customers to apply for loans but has also helped to reduce the turnaround time for loan processing.

Moreover, e-signatures have made the loan disbursement process quicker and more efficient. This is because customers can now sign loan documents digitally, eliminating the need for physical paperwork and reducing the time and costs associated with document handling and storage. The e-signature process also ensures that loan agreements are securely executed, reducing the risk of fraud or tampering.

Data Privacy and Security: To ensure that customer data is protected and to prevent data breaches, the RBI has issued guidelines for data privacy and security for digital lending platforms. These guidelines outline the best practices for data privacy and security for digital lending platforms, emphasizing the need for robust data protection measures and strict adherence to data privacy laws. They also require lenders

to implement strong authentication processes, multi-factor authentication, and encryption techniques to secure customer data. Lenders are also required to conduct regular security audits and vulnerability assessments to identify potential security threats and to implement remedial measures to address them.

Credit Information Companies (Regulation) Act:

The RBI has also strengthened the regulatory framework for Credit Information Companies (CICs), which play a critical role in digital lending by providing credit information to lenders. The aim is to ensure the quality of credit information and to protect the confidentiality of credit information.

Prudential Framework: The framework requires

banks to adopt a risk-based approach to digital lending and to have in place robust systems and processes to manage the risks associated with digital lending. This includes a comprehensive credit risk assessment process, strict adherence to lending limits, and the establishment of appropriate internal controls and oversight mechanisms.

The framework also requires banks to ensure that their digital lending platforms are adequately secured and that customer data is protected at all times. Banks are required to have in place a strong and secure IT infrastructure, including appropriate encryption and authentication measures, to safeguard customer data from cyber threats and data breaches. Furthermore, the framework requires banks to maintain adequate



documentation and records for all digital lending transactions. Banks are required to keep track of all customer data, loan documentation, and other relevant information related to digital lending activities to ensure transparency and accountability.

Entry of Technology Service Providers of Various Forms, in addition to the existing ones, into the 'Financial Sector' creating a Larger Universe for

the Ecosystem

RBI Guidelines on Digital Lending on September, 2022:

- The Reserve Bank of India (RBI) issued guidelines on digital lending on September 2022, to promote responsible lending practices and protect borrowers.



- RBI in these guidelines has tried to regulate the 'Digital Lending Market' through Regulated Entities (RE) which often enter in partnerships with various digital lending platforms to facilitate online lending.
- The very first guideline of RBI on digital lending says that "REs shall ensure that all loan servicing, repayment, etc., shall be executed by the borrower directly in the RE's bank account without any pass-through account/ pool account of any third party."
- "REs shall prominently publish the list of their DLAs (Digital Lending Apps/Platforms), Loan Service Providers (LSPs) engaged by them and DLAs of such LSPs with the details of the activities for which they have been engaged, on their website," said another guideline.
- Regulated Entities (REs) are entrusted with the responsibility to verify documents various loan documents and digital signatures.
- Some Digital lenders sanctioning loan amounts that are beyond the repayment capacity of the borrower. To tackle this issue the RBI has issued guidelines that "Regulated Entities shall capture the economic profile of the borrowers covering (Age, Occupation, Income, Existing obligations etc.), before extending any loan over their own Digital Lending Apps (DLAs) and/or through Loan Service Providers (LSPs) engaged by them, to assess the borrower's creditworthiness in an auditable way" this step will reduce the loan default rate in the digital lending market.
- Regulated Entities also require to appointment of a 'Nodal Officer', such grievance redressal officers shall also deal with complaints against their respective Digital Lending Apps (DLAs). The details of the grievance redressal officer shall be prominently indicated on the Website of the Regulated Entities, its Loan Service Providers (LSPs) and on Digital Lending Apps (DLAs), as applicable. Additionally, borrowers have the

option to escalate unresolved complaints to the 'Integrated Ombudsman Scheme of the RBI'.

The above guidelines include measures to ensure transparency in loan disbursements and repayments, disclosure of fees and charges to borrowers, and limitations on automatic credit limit increase.

The RBI has mandated these regulations in order to check mis-selling to customers, unethical business conduct, exorbitant interest rates, and excessive engagement of third parties in digital lending transactions.

Conclusion:

RBI regulation in the 'Digital Lending Market' is crucial as it will ensure that there is sustained long-term growth in this segment. Most of the Digital Lending taking place today are in the form of short-term credit, availed mostly by low income or financially struggling individuals. Short-term small credit facilities to underserved populations will surely help the country to expand its middle-class population, which is the key to developing a strong economy, but an unregulated lending market leads to unscrupulous trade practices which may render the idea of large-scale digital lending unreliable. It is crucial that any short-term credit products made available to underserved populations are transparent, affordable, and designed to support financial inclusion rather than exacerbating financial exclusion. So, it is important that 'Digital Lending' takes place ethically and most regulated way possible and the RBI is making this sure through its guidelines from time to time. Overall, the RBI's efforts have helped to establish a regulatory framework for Digital Lending in India, which has helped to increased Transparency and Accountability in the Sector and provide a level of oversight to ensure customer.

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- a) RBI Guidelines.
- b) IMF Research Papers.

Quantum Readiness in Banking & Finance



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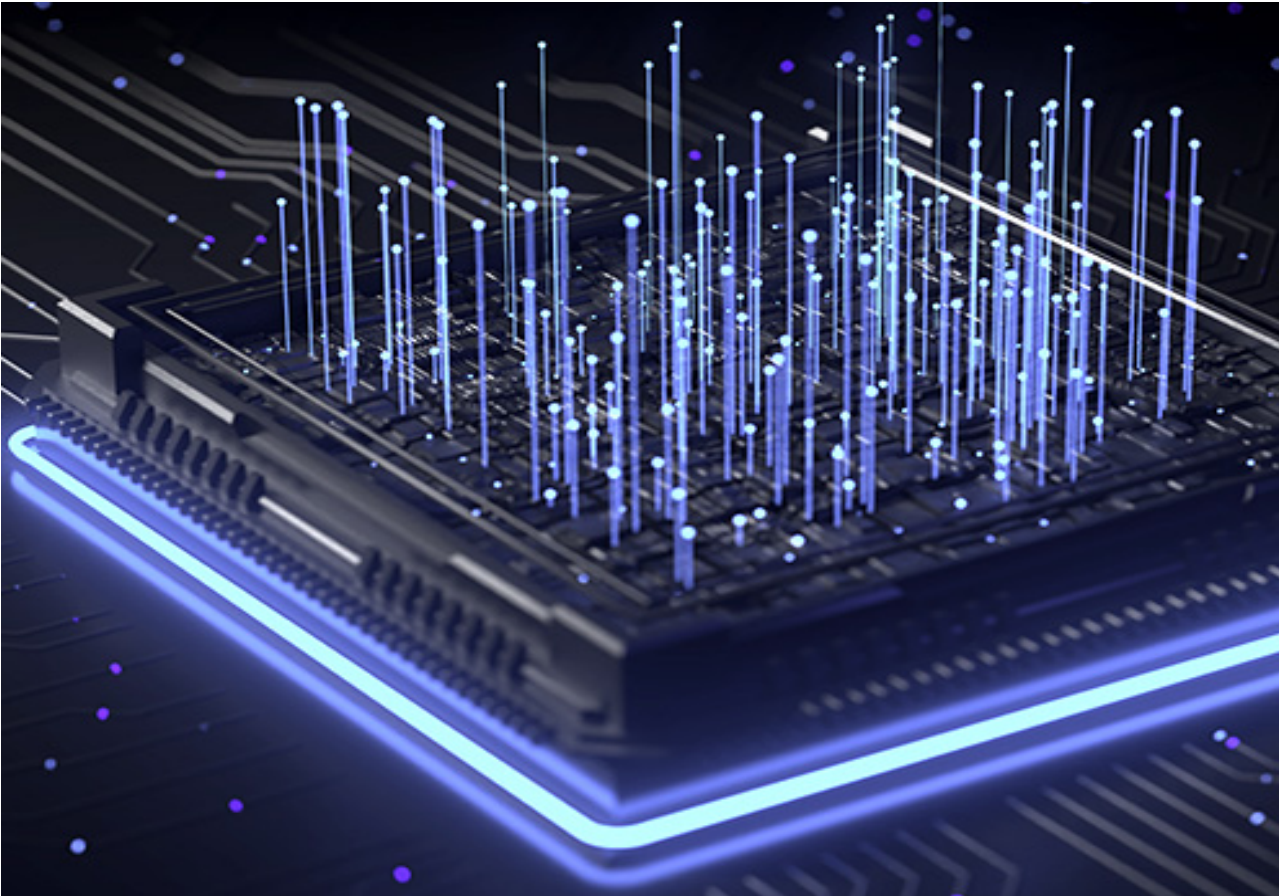
The banking and financial services sector has always been on the frontlines of technological innovation, but the advent of quantum computing presents both unprecedented opportunities and existential risks. Unlike traditional advances in processing power, quantum computing threatens to render current cryptographic safeguards obsolete. For a sector that depends on trust, integrity, and secure digital infrastructure, preparing for the so-called “Q-day” is not optional—it is urgent.

Quantum computers leverage qubits, superposition, and entanglement to solve problems that classical machines cannot feasibly address. The most famous example is Shor’s algorithm, which can factor large prime numbers exponentially faster than classical algorithms. Since RSA, ECC, and other widely deployed public-key cryptosystems rely on the hardness of such problems, a sufficiently powerful quantum computer could break the very foundations of online banking, secure payments, and digital identity verification. The risk is not hypothetical: adversaries today can store encrypted financial

data, waiting to decrypt it once quantum capabilities mature—a strategy ominously referred to as “harvest now, decrypt later.”

Recognizing these risks, global financial institutions and regulators have begun charting a roadmap for quantum readiness. A central pillar is the adoption of post-quantum cryptography (PQC). The U.S. National Institute of Standards and Technology (NIST) is already finalizing standards for lattice-based and code-based cryptographic algorithms designed to withstand quantum attacks. Banks must align their transition strategies with these emerging standards, adopting hybrid solutions that combine classical and quantum-resistant methods until PQC becomes mature and widely interoperable.

Another frontier is quantum key distribution (QKD), which uses the principles of quantum mechanics to enable theoretically unbreakable communication. Pilot projects, particularly in China and Europe, have demonstrated QKD’s promise for high-value financial transactions. However, high cost, limited



range, and integration challenges mean that QKD will likely complement rather than replace PQC in the foreseeable future.

Beyond cryptography, quantum computing also offers opportunities for the financial sector. Portfolio optimization, risk modeling, fraud detection, and derivative pricing could be revolutionized by quantum algorithms that analyze vast data sets intractable to classical systems. Institutions that invest early in understanding and experimenting with quantum applications may gain significant competitive advantage once the technology matures.

For banks and financial regulators, the path forward involves three layers of readiness: technological (evaluating and deploying quantum-safe solutions), operational (building migration roadmaps, updating IT governance, and ensuring vendor compliance), and strategic (coordinating with global regulators,

shaping policy, and managing systemic risk). Institutions such as the Bank of England, the European Central Bank, and the Reserve Bank of India have begun issuing advisories and forming working groups to examine quantum threats and prepare industry-wide guidelines.

Ultimately, quantum readiness is less about predicting the exact timeline of quantum supremacy and more about ensuring resilience against its inevitability. The financial sector has a narrow window to prepare. By adopting quantum-safe cryptography, investing in research, and embedding quantum risk into enterprise governance, banks can uphold the security and trust that form the backbone of global finance.

Technology Risk Management: A Driver of Productivity and Profitability in Modern Enterprises



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In today's hyper-connected world, technology has become the backbone of business operations. From digital banking platforms to supply chain networks and customer engagement systems, organizations depend on technology for efficiency, growth, and competitiveness. Yet with this dependence comes an array of risks—cyberattacks, system outages, regulatory non-compliance, and vendor failures—that can derail operations and erode trust. Far from being a cost center, effective technology risk management has evolved into a strategic enabler that safeguards continuity, enhances productivity, and directly contributes to profitability.

One of the most tangible contributions of technology

risk management lies in reducing downtime. Every hour of system unavailability can translate into lost transactions, dissatisfied customers, and reputational damage. By embedding controls for capacity planning, change management, and disaster recovery, risk management ensures that technology platforms remain available and performant. This resilience translates into higher productivity, as employees and customers can rely on uninterrupted access to critical services. A resilient infrastructure is not just safer—it is more efficient.

Another important dimension is customer trust. In sectors such as banking, healthcare, and e-commerce, users expect not only convenience but also safety for their data and transactions. Strong controls around cybersecurity, data privacy, and



fraud prevention create confidence that attracts and retains customers. This trust directly fuels revenue growth, as satisfied users are more likely to adopt digital channels, use advanced services, and recommend the organization to others. Technology risk management, therefore, acts as an invisible but powerful driver of profitability by sustaining customer confidence.

Compliance with regulations is also a productivity enabler. Global regulators have intensified scrutiny on areas like cybersecurity, outsourcing, and operational resilience. Organizations that manage risks proactively reduce the likelihood of penalties, litigation, or costly remediation exercises. Moreover, a strong risk posture allows smoother audits and certifications, freeing resources to focus on innovation rather than fire fighting. The alignment of risk management with compliance not only avoids costs but also builds reputational capital with regulators, investors, and customers.

Perhaps most strategically, technology risk management fosters innovation. When risks are identified, measured, and mitigated, organizations gain the confidence to adopt emerging technologies

such as cloud computing, AI/ML, or blockchain. Instead of stalling digital transformation out of fear, enterprises can move forward with managed assurance. This agility allows faster product launches, quicker market entry, and the ability to seize opportunities ahead of competitors. In essence, effective risk management becomes the safety net that encourages bold but responsible innovation.

The cumulative effect of these dimensions is a clear link between risk management, productivity, and profitability. Reduced downtime keeps operations running smoothly, customer trust expands revenue streams, regulatory compliance prevents losses, and managed innovation opens new growth avenues. What once was viewed as a defensive function is now a profit enabler.

Technology risk management is not about avoiding risk altogether but about harnessing it intelligently. By embedding resilience into systems and processes, organizations unlock productivity gains and secure lasting profitability. In a business environment where digital disruptions are inevitable, those who treat risk management as a strategic advantage will not only survive but thrive.

Fundamentals of Factoring



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In today's volatile business environment, where liquidity is often the lifeblood of operations, companies are increasingly turning to alternative financing methods to maintain healthy cash flow. One such method 'factoring' has emerged as a strategic tool not just for survival, but for sustainable growth. While factoring is not new, its relevance has grown significantly amid tightening credit conditions, extended customer payment terms, and the evolving needs of small to medium-sized enterprises (SMEs).

What is Factoring?

Factoring is a financial transaction in which a business sells its accounts receivable invoices to a third party known as a 'factor' at a discount. In return, the business receives immediate cash, often up to 90% of the invoice value, with the remainder (minus the factor's fee) paid once the buyer settles the invoice.

There are two primary types of factoring:

- **Recourse Factoring:** The business retains the credit risk. If the buyer fails to pay, the company (seller) must reimburse the factor.

- **Non-Recourse Factoring:** The factor assumes the credit risk, offering additional protection at a higher fee.

Why Factoring Matters

At its core, factoring bridges the gap between invoice discounting and payment collection. For businesses struggling with long receivable cycles or unexpected cash shortages, factoring provides:

- **Immediate liquidity** to support continuous business flow.
- **Improved cash flow**, as funds are received quickly and predictably.
- **Stronger supplier relationships** by ensuring timely payments.
- **Outsourced credit control**, as many factors handle collections and credit checks.

Factoring vs. Traditional Financing

Unlike bank loans or lines of credit, factoring is not debt-based. It leverages existing assets receivables rather than



adding liabilities to the balance sheet. For businesses with limited collateral or weak credit histories, factoring offers access to capital when traditional financing may not be an option.

Moreover, factoring is inherently scalable. As a company grows and its sales increase, so does its capacity to access funding via factoring.

A Quick Comparison

Feature	Factoring	Bank Loan
Collateral	Receivables	Assets or personal guarantee
Approval Speed	Fast	Slower
Impact on Credit	None (in some cases)	Affects credit capacity
Flexibility	Grows with sales	Fixed amount
Repayment	When customer pays	Monthly installments / crediting proceeds of sales

Types of Factoring

1. Domestic Factoring

Domestic factoring involves the sale of accounts receivable from local customers (i.e., within the same country) to a local factor to receive immediate cash.

Features:

- The seller (client), buyer, and factor are all in the same country.
- Typically governed by local laws and regulations.
- Easier communication and enforcement.
- Used by businesses that sell on credit terms but want faster cash flow.

Process:

1. Business delivers goods/services to a local customer.
2. Issues an invoice with standard credit terms (e.g., 60 days from the date of invoice or 30 days from the date of acceptance).
3. Factor purchases the invoice and pays 70–90% upfront.
4. When the customer pays, the factor remits the remaining balance (less fees).

Benefits:

- Faster access to funds.
- Outsourced credit control and collections.
- Improves liquidity without adding debt.

Risks:

- Still exposed to buyer's default (if recourse factoring is used).
- Can affect customer relationships due to third-party collections.

2. Export Factoring also called International Factoring

Export factoring is used when a company sells goods or services to foreign customers and wants to eliminate international credit risk while improving cash flow.

This is a two-factor system involving:

- Export Factor (in seller's country)
- Import Factor (in buyer's country)

Features:

- Buyer and seller are in different countries.
- Helps mitigate cross-border risk (non-payment, currency, legal).

- Usually non-recourse, meaning the factor assumes the credit risk.
- Common in global trade or exporting businesses.

Process:

1. Exporter ships goods to a foreign customer.
2. Sends invoice to export factor.
3. Export factor pays upfront (usually 80–90%).
4. Import factor, in buyer's country, handles collections and credit checks.
5. Once the buyer pays, the final settlement is made between the factors.

Benefits:

- No need for letters of credit or expensive trade

finance options.

- Exporter avoids foreign collection hassles.
- Eliminates foreign exchange risk if done in exporter's currency.
- Useful in countries with weak legal systems or uncertain creditworthiness.

Risks:

- Higher cost than domestic factoring.
- Dependent on the reliability of the import factor.
- Legal complexity and documentation requirements.

Feature	Domestic Factoring	Export Factoring
Parties Involved	Seller, Local Buyer, Factor	Exporter, Importer, Export Factor, Import Factor
Geography	Within same country	Across international borders
Currency Risk	None	Yes (unless paid in local currency)
Legal Jurisdiction	Domestic laws	Multiple jurisdictions
Credit Risk	Shared or retained	Usually shifted to import factor
Complexity	Low	High (requires international coordination)

Benefits of Factoring

- Improved Cash Flow: Immediate access to working capital.
- Flexible Financing: Grows with sales volume; no fixed repayments.
- Outsourced Collections: Factors often manage customer collections, saving administrative effort.
- Credit Risk Transfer (non-recourse): Protects against bad debts.
- No Additional Debt: Does not appear as a loan on balance sheets (if structured as a sale).

Risks and Considerations

- Cost: Fees can be higher than traditional debt financing.
- Dependency Risk: Over-reliance on factoring can mask cash flow problems.
- Creditworthiness of Customers: The factor's willingness depends on the quality of the receivables.
- Contract Terms: Includes advance rate, reserve amounts, recourse obligations, and termination clauses.



Who Uses Factoring?

Factoring is common in industries where businesses sell on credit terms but need faster access to cash. These include:

- Manufacturing and distribution
- Transportation
- Staffing and payroll services
- Wholesale and retail
- Construction

Professional services firms, tech startups, and even healthcare providers are also increasingly exploring factoring options tailored to their sectors.

Accounting Treatment

Proper accounting is critical for transparency and compliance:

- **Derecognition of Receivables:** Under IFRS 9 or ASC 860 (US GAAP), receivables can only be removed from the balance sheet if the risks and rewards of ownership transfer to the factor.
- **Treatment of Fees:** Factoring fees are usually recognized as finance costs or operating expenses.
- **Impact on Cash Flow Statement:** The cash received increases operating or financing cash flow depending on classification.
- **Disclosure:** Companies must disclose factoring arrangements, especially if significant.

Strategic Uses of Factoring

Factoring is often part of a broader financial strategy:

- **Seasonal Businesses:** Smooth out cash flow fluctuations.
- **Business growth:** Support rapid expansion without diluting ownership or increasing debt.
- **Companies with Limited Credit History:** Access financing when loans are unavailable.

- **Risk Mitigation:** Using non-recourse factoring to manage bad debt risk.

Common Terms in Factoring Contracts

- **Prepayment Rate:** Percentage of invoice value paid upfront.
- **Reserve Account:** Portion withheld until customer pays to cover disputes.
- **Factoring Fee:** Percentage charged on invoice amount.
- **Recourse:** Responsibility for unpaid invoices.
- **Notification:** Whether customers are informed of factoring.

The Role of CMAs in Factoring Decisions

As strategic advisors, CMAs play a pivotal role in assessing whether factoring aligns with a company's financial strategy. This includes:

- Performing cost-benefit analysis of factoring vs. other financing methods.
- Monitoring cash flow metrics and working capital trends.
- Ensuring contract terms with factors are understood and risk-adjusted.
- Advising on customer communication and integration of factoring into broader credit policies.

As a student of the CMA, understanding factoring isn't just about knowing definitions, it's about learning how to analyze, apply, and advise on working capital solutions in a business context.

Factoring sits at the intersection of corporate finance, financial accounting, performance management, and risk management all key domains in CMA.

Why Factoring Matters for CMA Students

- It helps build strategic thinking. Factoring is a great example of how tactical decisions (like freeing up cash) affect long-term strategy (like growth or debt management).

- Factoring helps companies get cash quickly by selling their receivables. As a CMA, you'll need to:
 - Assess whether factoring makes financial sense
 - Compare factoring to other financing methods
 - Model its effect on liquidity and performance ratios
- Factoring affects: CMA students learn how to track, explain, and manage the below changes, especially in performance reporting and dashboard analysis.
 - Cash flow
 - Working capital
 - Sales Outstanding
 - Current ratio
 - Profit margins (because of factoring fees)
- Factoring isn't just a math problem. It's a business decision with trade-offs:
 - Speed vs. cost
 - Cash today vs. full payment later
 - Control over collections vs. outsourcing accounts receivables

Conclusion

Factoring has evolved from being a niche financing option to a mainstream working capital solution,

especially in today's fast-paced, credit-constrained business environment. By enabling companies to unlock the value tied up in receivables, factoring provides an immediate and flexible source of funding that supports day-to-day operations, strategic growth, and financial stability.

From domestic to international factoring, this tool offers significant advantages adding value to its increasing demand.

For CMA students and professionals, factoring is a real-world application of financial strategy, performance management, and risk assessment.

Ultimately, understanding the fundamentals of factoring isn't just about knowing how it works, it's about knowing when it works best. And that's what sets the tone for the future of trade finance.

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When Money Speaks in Dots Braille in banking: A quiet revolution of independence and dignity



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I recently watched the Hindi classic “Sparsh”, where Mr. Naseeruddin Shah portrays the principal of a blind school—a man of immense dignity, fiercely self-reliant, yet almost allergic to the very idea of pity or unsolicited help. His character unsettled something deep within me. It compelled me to reflect: if such a man, armed with courage and intellect, resists dependency with all his might, then what unseen labyrinths of difficulty must he navigate in something as ordinary, yet indispensable, as his banking needs? In that silent struggle between autonomy and accessibility lies a profound question about how society defines true independence.

For most of us, visiting a bank is a routine task—filling out forms, checking a passbook, or using an ATM. But for a visually impaired person, these simple actions often come with hurdles. Imagine having to ask a stranger to read your balance or help you withdraw cash. The loss of

privacy and independence is painful. This is where Braille in banking steps in—not as a luxury, but as a lifeline.

Braille: A Touch of Independence

Braille has long been the bridge to literacy for the blind. Now, Indian banks are slowly adapting it to financial services. Braille passbooks allow customers to read their transactions by touch. The cheque books come with Braille slips for safe use. Some banks even issue debit cards with tactile markings, making it easier to identify them.

The most significant step has been the introduction of Talking ATMs with Braille keypads. These machines, guided by audio instructions through headphones, give visually impaired customers the privacy and confidence to withdraw money independently.



The RBI Push

The Reserve Bank of India (RBI) has played a vital role in this journey. It directed banks to provide all facilities—cheque books, loans, internet banking, lockers, and ATMs—without discrimination. RBI also instructed that at least one-third of all new ATMs must be talking ATMs with Braille keypads, and that accessible infrastructure like ramps and tactile signs be made standard. More recently, RBI has extended accessibility requirements to payment systems and digital banking platforms, recognizing that true inclusion goes beyond physical banking halls.

Major RBI Guidelines for Visually Impaired Banking Access

1. Universal Access to Banking Services

Circular (2008): RBI directed that visually challenged individuals must be offered all banking facilities—including cheque books (including third-party cheques), ATMs, net banking, lockers, retail loans, and credit cards—without discrimination, affirming their legal competence to contract.

2. Accessible ATM Infrastructure

Key mandates:

- ✱ Ramps for ATMs and branch entrances to ensure physical accessibility.
- ✱ Talking ATMs with Braille keypads: At least one-third of all new ATMs must be equipped with audio guidance and Braille keypads, strategically placed to ensure at least one in each locality. Banks must also notify visually impaired customers of such ATMs.

3. Reinforcement of Guidelines

Circular (2012): RBI reiterated the above requirements, urging banks to strictly adhere to their mandates and expand accessible services, especially for internet banking.

4. Guardianship Facilitation

Master Circular (2009): RBI instructed banks to accept guardianship certificates—issued under the Mental Health Act or the National Trust Act—allowing persons with disabilities like autism or cerebral palsy to open and

operate accounts. Banks were also advised to display this information prominently in branches.

5. Infrastructure & Service Accessibility Standards

By February 2024, the Ministry of Finance released Accessibility Standards and Guidelines for the Banking Sector which RBI referenced. These include:

- ✱ Tactile guidance paths, handrails with Braille plates, and accessible counters.
- ✱ Information access via assistive devices.
- ✱ Priority service counters for persons with disabilities.

6. POS Systems and Broader Accessibility Push

2024 Update: RBI mandated that all payment system participants (banks and non-bank payment providers) review and upgrade their devices—like POS terminals—to be accessible to persons with disabilities. This includes making systems compatible with audio output and Braille, and integrating accessibility into customer service committees, reporting, and infrastructure planning.

Implementation in Indian Banks: Progress & Initiatives

- ✱ Union Bank of India launched India's first fully accessible "Talking ATM" in 2012, complete with accessible manuals in DAISY and electronic Braille formats.
- ✱ SBI rolled out its first talking ATM the same year and had deployed over 5,555 by mid-2014.
- ✱ Other banks—HDFC, Bank of Baroda, ICICI, and more—have introduced Braille-enabled services, talking ATMs, ramps, and accessible counters.
- ✱ Union Bank also rolled out the "Union Sparsh" debit card, featuring tactile markings for easier use by visually impaired customers, along with accessible apps like VYOM and services like VCONN.



The Roadblocks

Yet, challenges remain. Many rural branches still lack accessible ATMs. Bank staff are often unaware of these facilities, leaving customers dependent on others. Digital banking apps are not always screen-reader friendly, creating barriers in an increasingly cashless economy. Even where accessible ATMs exist, poor maintenance sometimes renders them unusable.

Sum up the Impediments That Persist

- ✓ **Limited Reach:** Many rural branches and ATMs still lack ramps, tactile paths, or talking/Braille ATMs.
- ✓ **Poor Digital Accessibility:** Banking apps and websites often fail to support screen readers or voice navigation; CAPTCHAs especially pose a barrier.
- ✓ **Lack of Staff Awareness:** Many banking staff still lack training in disability sensitivity and service, leading to unintentional exclusion.
- ✓ **Maintenance & Consistency Issues:** Accessible features often fall into disrepair or are inconsistently implemented across branches.

Steps Towards a More Inclusive Future

The way forward is clear. Banks must expand accessible

ATMs and Braille passbooks, ensure apps and websites meet accessibility standards, and train staff to serve visually impaired customers with sensitivity. Awareness campaigns can also help customers learn about facilities that already exist but remain underused. Partnerships between banks, technology companies, and disability organizations can accelerate innovation and affordability.

A Matter of Dignity

Accessible banking is not charity—it is a question of dignity. Money is deeply personal, and no one should have to disclose his/her balance or PIN just to complete a transaction. Every Braille label, every talking ATM, and every accessible app represents freedom: the freedom to stand equal in a financial system that belongs to all.

As Louis Braille once gave literacy to the blind, the integration of Braille into banking is now giving them something just as valuable—independence in managing their own money. And in that independence lies true empowerment.

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Zero Defect Zero Effect (ZED)

(An Initiative for Micro, Small, and Medium Enterprises)



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Micro, Small and Medium Enterprises (MSMEs) play a pivotal role in the socioeconomic advancement of the Nation. In the context of India, the sector has acquired substantial significance owing to its contributions to the Nation's Gross Domestic Product (GDP) and Export activities. Additionally, this sector has made profound contributions to the cultivation of entrepreneurship, particularly within the semi-urban and rural regions of India.

To ensure that domestically produced goods undergo an uninterrupted manufacturing process yielding products characterized by “zero flaws” and a production methodology that exerts “Zero Impact” on the environment, the Indian government instituted the ‘Zero Defect Zero Effect (ZED)’ Certification, thereby fostering Sustainable Development. This initiative facilitates MSME manufacturers in scaling their operations and optimizing production efficiency while minimizing waste.

The strategic planning surrounding ZED primarily aims to advocate for two key initiatives:

- ✓ The “National Quality Mission” and
- ✓ The Promotion of “Make in India” products and processes.

Which are integral to ensuring ongoing enhancement. To date, over 23,000 MSME Enterprises have submitted their Applications for ZED Certification.

The Ministry of MSME inaugurated the ZED Scheme in 2016, targeting both the Manufacturing and Service Sectors. This Scheme encompasses a ZED maturity assessment model, wherein enterprises endeavour to enhance their business processes to ascend through the tiers of Bronze, Silver, and Gold.

ZED fundamentally pertains to various aspects including productivity, the application of quality tools



and manufacturing systems, advancements in energy and financial efficiency, as well as the enhancement of human resources and technological capabilities, which encompass design and intellectual property rights in both products and processes. Furthermore, it encourages MSMEs to consistently elevate their quality standards for both products and processes.

Eligibility Criteria:

All MSMEs that have been Registered through the UDYAM Registration Portal are deemed eligible to apply for ZED Certification and to access the associated benefits.

Ratings:

The ZED Certification Scheme comprises Three Rating Tiers: Bronze, Silver, and Gold. MSMEs may apply for the corresponding Certification Level subsequent to their Registration and Pledge, contingent upon the Caliber of their manufacturing processes. The Certification will be awarded based on a Rating Scale Ranging from 1 to 5, delineated as follows:

- ✓ Bronze: Rating of 2.2 to 2.5.
- ✓ Silver: Rating of 2.5 to 3.5.
- ✓ Gold: Rating of 3.0 to 3.5.

Parameters:

Grasping the concept of a ZED Certificate is vital for enterprises aspiring to elevate their Quality and Sustainability Benchmarks. Acquiring a ZED Certificate not only bolsters their credibility but also enhances operational efficacy, thereby promoting sustainable business practices.

Bronze-FIVE Parameters:

To achieve Bronze Certification, an MSME must fulfil the following criteria:

- ✓ Leadership.
- ✓ Swachh Workplace.
- ✓ Workplace (Occupational) Safety.
- ✓ Measurement of Timely Delivery.
- ✓ Quality Management.

Silver-FOURTEEN Parameters:

To achieve Silver Certification, an MSME must satisfy the following conditions:

- ✓ All five parameters mentioned above.
- ✓ Human Resource Management.
- ✓ Daily Works Management.
- ✓ Planned Maintenance & Calibration.
- ✓ Process Control.
- ✓ Product Quality & Safety (Testing / Certification).
- ✓ Material Management.
- ✓ Energy Management.
- ✓ Environment Management.

Gold-TWENTY Parameters:

To attain Gold Certification, a Micro, Small, and Medium Enterprise (MSME) must satisfy the subsequent criteria:

- ✓ All the aforementioned 14 criteria.
- ✓ Supply Chain Management.
- ✓ Risk Management.
- ✓ Waste Management (Muda, Mura, Muri).
- ✓ Technology Selection and Upgradation.
- ✓ Natural Resource Conservation.
- ✓ Corporate Social Responsibility.

Certification Benefits:

The ZED Certification confers significant advantages upon MSMEs by augmenting the quality of their products, minimizing defects, and fostering sustainable practices. Possession of a ZED certificate enables MSMEs to enhance their market credibility, attract a larger customer base, and secure improved financing opportunities. The ZED certification initiative facilitates enhanced competitiveness for MSMEs on both domestic and international fronts by adhering to stringent quality and environmental management standards.

Advantages:

- ✓ The ZED certification initiative assists in improving product quality, consequently diminishing product rejection rates, particularly within the context of MSME Exports.
- ✓ It encourages the advancement of Technology and tools, thereby elevating Business Productivity.
- ✓ MSMEs are afforded the opportunity to acquire novel production and management methodologies.
- ✓ The Ministry of MSMEs orchestrates industry awareness programs and workshops aimed at assisting small enterprises in comprehending this initiative.
- ✓ It contributes to the establishment of a Zero-Defect manufacturing milieu for MSMEs.
- ✓ The Zero Effect paradigm safeguards the environment by promoting awareness regarding sustainability.
- ✓ This initiative has led to enhancements in product/process quality and revenue generation within the MSME sector.

Government Subsidies:

The ZED Certification initiative advocates for high-quality, sustainable manufacturing Methodologies. To comprehend the process of acquiring a ZED certificate, MSMEs are required to apply via the ZED portal, undergo a comprehensive evaluation, and fulfil the stipulated standards. This procedure aids enterprises in refining their operations, reducing defects, and augmenting environmental sustainability, thereby enhancing their market competitiveness.

MSMEs will receive Financial assistance or subsidies for attaining a ZED Certification Level. The government has delineated the following subsidy structure concerning certification expenses under this initiative:

- ✓ Micro enterprises: 80%.
- ✓ Small enterprises: 60%.
- ✓ Medium enterprises: 50%.

Additional Subsidy:

- ✓ Women-owned MSMEs, SC/ST Entrepreneurs, or MSMEs located in the North Eastern Region, Himalayan regions, Left Wing Extremism areas, Island territories, or aspirational districts will benefit from an additional subsidy of 10%.
- ✓ Moreover, a supplementary 5% subsidy will be available for MSMEs that are also participants in the SFURTI or Micro & Small Enterprises – Cluster Development Programme (MSE-CDP) administered by the Ministry.

MSMEs are permitted to elevate their Certification Level at any point prior to the expiration of their current ZED Certification validity. The costs and subsidies will remain consistent with the level for which application is made.

A limited-purpose joining incentive of ₹ 10,000/- will be allocated to each MSME upon their commitment to the ZED Pledge. This incentive must be utilized within a specified timeframe according to the following modalities:

1. MSME Applicants may redeem this joining incentive solely once while applying for a ZED Certification (Bronze, Silver, Gold).
2. Should an MSME utilize the joining incentive for any of the three certifications, the value of the incentive will first be deducted from the certification cost, after which the applicable subsidy will be considered.
3. This joining incentive will remain valid for one year subsequent to the MSME's commitment to the ZED Pledge.

ZED Registration:

The procedure for obtaining a ZED certificate encompasses multiple stages to guarantee adherence to stringent quality and sustainability benchmarks. To comprehend the methodology for acquiring a ZED certificate, Micro, Small, and Medium Enterprises (MSMEs) must initially submit an application via the official ZED portal, undergo a comprehensive evaluation, and proceed through subsequent stages. Attaining this certification significantly bolsters business credibility and enhances competitive positioning.



Herein is a detailed step-by-step registration process.

- ✓ The registration procedure can be executed utilizing either a web interface or a mobile device by accessing zed.msme.gov.in.
- ✓ MSMEs are afforded the opportunity to register at no cost, provided they utilize a valid telephone number and email address.
- ✓ It is imperative to furnish a legitimate UDYAM Registration number for the purpose of verification.
- ✓ Subsequently, a desktop evaluation is conducted to determine the Plant Location and the corresponding Plant activity.
- ✓ Participants must provide a valid Email ID and confirm the accuracy of the Email ID submitted.
- ✓ Following this, the ZED pledge is undertaken, and ultimately, the ZED certificate will be dispatched to the registered Email ID. Furthermore, this Email ID shall serve as the primary channel for all future correspondence.

ZED Pledge:

The primary objective of committing to a pledge is to establish a “Pre-commitment” or a solemn undertaking by MSMEs to adhere to the principles of Zero Defect Zero Effect in their operational practices, thereby motivating them to progress on the ZED journey.

“We commit to adhering to the principles of Zero Defect Zero Effect within our organization and ensuring that our operational processes are environmentally sustainable and socially responsible, yielding safe and high-quality products. We shall endeavour to give back in every feasible manner to our workforce, our community, and our environment.” – ZED Pledge

Key Components:

The ZED certificate is conferred upon organizations that demonstrate a commitment to manufacturing high-quality products with a minimal ecological footprint. The ZED certificate scheme advocates for the adoption of best practices in manufacturing and sustainability, thereby enhancing the competitiveness of businesses. To secure a ZED certificate, MSMEs are required to apply through

the ZED certificate scheme portal, undergo an evaluation, and satisfy the stipulated quality and sustainability criteria.

The principal activities encompassed within the ZED certification scheme are delineated as follows:

- ✓ Training and Awareness.
- ✓ Within the framework of the ZED Certification scheme, eight distinct activities have been delineated.
- ✓ Initiatives pertaining to industry awareness.
- ✓ Workshops conducted at regional, state, and national levels.
- ✓ Onsite training aimed at enterprise capacity development in industrially disadvantaged and remote regions.
- ✓ Training for officials from MSME- Development Institutes, MSME Testing Centres, Technology Centres, and IPFC, among others.
- ✓ Training for consultants, assessors, and master trainers.
- ✓ International benchmarking, overseas travel, and international training related to ZED, encompassing Quality Management Systems (QMS), Quality Technical Training (QTT), and productivity enhancement.

To Conclude:

MSMEs will be afforded an opportunity to benchmark their systems and processes against global best practices. This endeavour also augments global competitiveness, thereby enhancing visibility and brand recognition. ZED certification is poised to incentivize MSMEs to elevate their performance and streamline business processes, leading to a reduction in defects and adverse environmental impacts.

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Management Of Political Risk



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[In today's highly interconnected, uncertain, and complex world, businesses and investors face a myriad of political risks that can impact their operations, profitability, and sustainability. Effective political risk management is therefore crucial for businesses and investors to navigate the complexities of the global business climate and to mitigate potential losses and capitalize on opportunities. This article attempts to provide a framework for effective political risk management in the present context]

Introduction

Political risk refers to the possibility that political decisions, events, or conditions in a country will adversely affect the business environment, investments, or the achievement of strategic objectives. It arises from actions or inactions of governments, political movements, or societal unrest that can influence the stability, predictability, and profitability of economic activities. Key elements include: Government actions (e.g., expropriation, nationalization, changes in taxation, sudden regulatory shifts), Political instability (e.g., coups, civil unrest, terrorism, armed conflict), Policy uncertainty (e.g., trade restrictions, contract renegotiations, capital controls), and Geopolitical factors (e.g., sanctions, cross-border disputes). Precisely political

risk is the uncertainty facing the businesses, investors and governments as a sequel to political dynamics which might upset the expected outcomes.

Political risk entails strategic, financial, or personal losses on an economic agent as a sequel to events triggering political changes or political instability in a country. Political risk also arises due to sudden changes in macroeconomic and social policies (monetary, fiscal, trade, industrial, investment, and developmental) in the wake of political changes. Uncertainty about returns on invested funds can arise consequent upon a change in government, legislative bodies, other foreign policymakers, or military control. Unlike other risks, political risks are also triggered by politically potential individuals and people with certain

recognisable sets of driving factors and limitations.

It follows from the foregoing that political risk arises from political actions, political instability and policy variations which have the potential to impact either positively or negatively value creation processes inherent in trade, commerce, investments, or other economic activities.

Political risk may be viewed as sub set of country risk which is a broader risk measure for lending, investing, or doing business in a particular country while political risk is focused only on risks emanating due to political factors. Algebraically Country Risk = Political Risk + Economic Risk + Financial Risk + other risks.

Business should address country risks when making strategic, long term financial decisions e.g., entering a new market, deciding sovereign lending, mergers& acquisition across borders while political risk need be analysed when their business operations are directly exposed to government action or instability because even in otherwise strong economy political decision often have potential to hit hard specific sectors.

The businesses are now treading in a new world of political risk. Although dictatorial expropriations seizing assets to subserve own agenda are far less common now a days the impacts of regulatory expropriations have become more uncertain and intense than before. However, although national governments continue to be the main influencers in the business environments, substantial political risks now a days emanate from other players too: individuals using cell phones and using social media network, terrorists exploding bombs, local level functionaries issuing ordinances, UN officials administering sanctions so on and so forth! Political activities are now ubiquitous happening almost everywhere viz., on the street, in the cloud, in the chat, board rooms, and even inside homes. Political events occurring in far off places might impact businesses in far flung areas in lightning speed.

Today's political landscape is more complex an uncertain with the presence of rising states, declining states, failed states, rogue states and non-state actors viz., terrorist groups and cyber criminals.

Tariff policy and Political risk

Tariff policies (TP) have significant bearing on political risk. TPs tends to modify trade relationships. It has

potential to trigger economic instability often inviting disruptive retaliatory measures. TPs have often been used for geopolitical leverage. Besides, TPs have potential for ramified impacts on configuration of global supply chains, the stability of international institutions, and on the political scenarios of nations. Tariff policy might erode multilateralism and amplify geopolitical tensions. Tariffs may disturb global supply chains necessitating economic agents to explore possibilities of relocation of production or to look for alternative sourcing options which might entail greater cost and time. The consequential disruptions can increase costs for both businesses and consumers and might cause economic downturn. Increased costs can exert financial strains on government income/expenditure which has the potential to trigger political unrest. There is likely retaliation from the countries adversely affected by tariff by putting up counter tariff or other trade barriers fuelling escalation of trade tensions. Retaliatory tariffs may turn out to be disproportionate and suboptimal impacting adversely specific industries or companies causing economic adversity and possible political backlash. In the midst of unilateral tariff overhauling in an oligopolistic economic climate business will attempt diversification of supply chain seeking closure trade relationship leading to the development of new trading blocs and partnerships, potentially reconfiguring the global economic and political order. Tariff triggered escalated trade tensions and uncertainty have the potential to make political risk insurance more costly for businesses to operate in certain markets. It may be pertinent to point out that Small and medium-sized enterprises (SMEs) having meagre financial wherewithal are more vulnerable to the negative impacts of tariffs This can lead to job losses and reduced economic activity in affected regions.

Dimensions of Political Risks

The key dimensions of political risk may be enumerated as under:

Government Stability: Political risk arises from frequent changes in government, coups, or weak administrative structures. The impacts of these are by way of disruption in policy continuity and regulatory uncertainty.

Regulatory and Legal Risk: This refers to the risk entailed in sudden changes in laws,



regulations, taxation, or enforcement practices viz., New foreign investment laws, expropriation, or nationalization of assets etc. These tend to increase compliance cost or results in loss of assets. One important issue for many firms is treading in unfamiliar and diverse regulatory terrain and their varied compliance requirements. While diversifying supply chain at increasing pace, entities must be in readiness to steer through local regulations and make their models adaptive to ensure steady growth. A company intending to enter and grow into a new market without local knowledge and expertise of the employment codes in force there, is likely to falter in meeting regional obligations and jeopardize operations. It must be borne in minds that compliance requirements and regulations might vary significantly even between neighbouring countries and among those sharing trade agreements.

Policy Risk: It emanates out of uncertain changes in economic, trade, or industrial policies (viz., Changes in tariffs, trade barriers, subsidies, or price controls etc.) impacting business planning and profit margins.

Corruption and Bureaucracy: Inefficiencies and unpredictability in government processes due to systemic bribery, red tape, delays in granting licenses, arbitrary decisions, besides discriminatory taxations tend to increase operational costs and cause project delays.

Civil Unrest and Internal Conflict: Social instability due to protests, strikes, ethnic violences, migration, separatism, federalism, civil wars, coup/terrorism, or insurgencies threatening employee safety, inflicting damages to infrastructure, may be the potential operation disrupters.

Geopolitical Tensions : Risks emanating from interstate wars, unilateral and/multi-lateral economic sanctions, or diplomatic breakdowns have the potential to cause disruption in trade, loss of market access, or supply chain interruptions.

Expropriation and Nationalization: Government reneging on contracts, risk of forced seizure or control of private assets by the government have

the potentials to cause direct loss of investments or reduced control over operations.

Currency and Repatriation Risk: These refer to the restrictions on converting or transferring profits or capital out of the country. These may cause financial losses and liquidity constraints.

Election-related Risk: Uncertainty associated with elections and political transitions (Viz., Populist promises, anti-business rhetoric) might result in Policy reversals or trigger mass protests affecting investor confidence.

Natural resource manipulation: This refers to politically motivated changes to supplies of energy and rare earth elements.

Political Risk Management Framework

The political risk topography has been undergoing spectacular changes over the decades. In the wake of the end of the Cold War, came supply chain innovations, followed by the information technology revolution. In this dynamic backdrop an effective political risk management framework emphasises attention to four competencies viz., understanding the risk, analysing the risk, mitigation of risk which cannot be eliminated and putting in place an early response system enabling effective management of crisis and continuous learning.

Understand the risk

Each economic agent approaches risk differently. The factors influencing risk appetite of economic agents are time horizon of major investments, existing options for alternative investments, the ease of exiting investments and visibility to consumers. For example oil and gas companies which sink in huge investments in far flung countries many of which are mostly governed by autocratic governments and are prone to social unrest. The key assets of these entities cannot be moved out easily. Such entities may therefore have greater risk appetite for political uncertainties unlike others like hotel chains, theme parks etc., who are more susceptible reputational damages.

Ideally political risk should visibly be a concern for each and every functionary of the entity albeit all may not have identical take on it. Strategically organisations should attempt to align views on risks across the organisation. A

systematic process may be put in place to impart training about risks to all particularly the new recruits with the association of important business leaders including the board members in anchoring risk appetite, identifying risks and integration of risk assessment & mitigation into business planning. Identification of blind spots would be an important exercise. Ways and means need be explored to identify and reduce blind spots. Creative what if analysis for things which might go wrong may stand in good stead. Scenario planning, war-gaming exercise etc., might be used as tools for identification of hidden risks.

Analysis

Access to relevant information on political risk the organisation would be likely to face is crucially important. This obvious requirement is often missed by the organisations. The future is not predictable. But effective risk analysis challenges the assumptions and the models about how the risks might unfold for greater organisational preparedness. Precise quantification of vulnerability may not be possible. However, it may be possible to reduce uncertainty. One method to begin with may be to list out the most valuable assets and the most vulnerable assets. Greater convergence of these lists will imply the higher an entity's political risk. Various tools like formation of Red Team (which assumes opposing roles or points of view) and Montecarlo simulations to project the range and likelihood of outcomes might be of good help. But how do we integrate political risk analysis into business decisions? Not many organisations integrate risk analysis into formal process! One popular method is to resort to ad hoc analysis as the events arise. Better approach may be to keep constant and effective vigil across the business climate to spot risks and opportunities. Significant improvements in decision making can be attained by use of rigorous political risk analysis by the functionaries. Conducting thorough research before entering new markets is crucial for identifying risks.

Mitigation

Professionals have been grappling with as to how exposures to identified political risks can be reduced!! Three strategies can be outlined in this regard viz., dispersion of critical assets, creation of surge capacity and slack in supply chain, liaising with other players in the industry to share political risk assessment and mitigation strategies. The early warning systems

need be made increasingly sophisticated leveraging advances in technology and data availability. Limitations in data availability remain a major issue when trying to accurately assess political risk. Attention need be bestowed to construction of relevant data sets which facilitates political risk managers to carefully study the chemistry of association among political and economic institutions, as well as the interface between domestic norms, actors, institutions, and external influences. An efficient and effective system for early warning of impending perils need be in place. A responsive team of people must be deployed to act upon effectively on the emitted signals by the system. The system should constantly scan through wide range of data/information. Protocol should be established for automatic triggering of action in response to the transmitted warning signal by the system. The protocol should lay down basic rules as to what action to be taken when and by whom to avoid any confusion when the risks actually devolve. Inhouse threat assessment units manned by person of requisite experience and competencies may constitute to track political developments on a real time basis. Engagement of dedicated team for sensing the impending political risk and building up an early warning signal would make a tangible difference.

What can be done to minimise potential damages much ahead of the unfolding of the crisis? Inculcation of congenial relationship with external stakeholders can help organisation in good stead.

Political risk insurance policies can provide protection against specific risks like expropriation or political violence.

Response

Learning from near miss events is not being optimally harnessed by the risk managers. There is inherent tendency to wink at near miss events with complacency that system resilience could prevent the occurrence of the possible bad event. The leaders need be conscious and correct this tendency bearing in mind that it is likely that near miss events occurring due to some systemic vulnerabilities.

Assessment of organisational effectiveness in responding to crisis must receive proper attention. Multiple stakeholders (viz., consumers, investors,



sectoral regulators, law enforcement agencies, public representatives, journalists, social activists) generally have association with and stake in evolving crisis. Each stakeholder's stance might affect others strategies and stances giving rise to new risks queering the pitch for others. Manging the dynamics of such cross functional interface having ramified implications is not an easy but un avoidable exercise.

A mechanism for continuous learning need be put in place. Smart crisis response framework must have feedback loop for knowing a priori the likely disaster hits to lower the chances of crisis occurring and improve the response when one eventually does. Continuous learning frame work should have elements to appraise what need be continued to be done, what doings should be stopped and what new things to be done. Continuously tracking of political developments and policy changes is necessary.

Leveraging AI in political risk management

AI can be effectively leveraged for powerful and effective political risk management process. AI can be of better help for the organizations to detect, analyse, and respond to political changes before they cause major disruptions. Natural Language Processing (NLP) can scan global news, social media, and government announcements in real time for early capture of signs of political instability giving more time to adjust operations. Machine learning models use historical ,political, economic, and social data to predict possible future events (elections, coups, sanctions). The emanating inputs have potential to Improve contingency planning. AI may be deployed to evaluates public sentiment toward government policies, or foreign companies using relevant social media data . The outcomes may help for example detecting early rising hostility toward foreign investments in a region. These inputs may help adjust communication and investment strategies. AI may be used to aggregates multiple risk indicators (conflict risk, policy volatility, corruption index) into visual maps. These maps enable the entities to see which countries have rising political risk scores over the next quarter and thus would facilitate decision making. AI can track changes in laws, sanctions, and trade restrictions more effectively in real time and helps preventing regulatory violations and penalties by transmitting Immediate alerts when a country updates its foreign investment policy. AI models simulate how political

instability in one region affects supply chains and costs enabling economic agents to evolve alternative sourcing strategies. Recent developments in machine learning have altered how one can use dynamic, probabilistic models to predict instead of depending upon rule-based, static logic. The output of machine learning is a key component of intelligence. The prediction accuracy improves by learning, and the high prediction accuracy often enables machines to perform tasks that, until now, were associated with human intelligence.

There are three key areas where AI will assist managers in analysing and mitigating risks: (a) early identification of risks,(b) precision in risk assessment, and (c) identification of unknown unknown risk correlations. These three categories also represent how AI and its application to political risk assessment will evolve and why it is of particular relevance to risks such as regulatory expropriation.

Thus, AI in political risk management turns reactive decisions into proactive strategies by providing faster detection, deeper insight, and data-backed predictions.

Political Risk Rating

It helps investors decide whether to enter, expand, or withdraw from a market. Guides lenders and insurers in pricing loans and coverage. Assists governments in benchmarking their investment climate. Following factors are considered in risk rating process .

- A. Government stability (strength and predictability of institutions).
- B. Policy continuity (regulatory and tax consistency).
- C. Security environment (conflict, terrorism, crime).
- D. Legal system and corruption (contract enforcement, property rights).
- E. Geopolitical risks (sanctions, wars, trade restrictions).
- F. Socio-economic risks (inequality, protests, labor unrest).

Some providers of Political Risk Ratings are Fitch Solutions, Economist Intelligence Unit (EIU), S&P Global: World Bank Governance Indicators. Rating scales vary

by providers. Often expressed as a score (0–100) or in letter grades (AAA to D). Higher scores/grades implies lower political risk (more stable). Lower scores/grades indicative of higher political risk (less stable, riskier for investors). For example while Norway might receive a very high rating (low risk) due to stable governance, Venezuela may receive a very low rating (high risk) due to political instability, sanctions, and expropriation risk.

Conclusion

The current geopolitical landscape in 2025 is tainted by heightened uncertainty, increasing fragmentation, and increasing conflict risks. Armed hostilities in regions such as Ukraine, the Middle East, and parts of Africa continue to escalate, while strategic tensions between major powers—particularly the U.S. and China—are tending to reconfigure the structure and pattern of global alliances and trade flows. Economic nationalism, supply chain decoupling, and competition over critical technologies and energy resources are intensifying. Meanwhile, the global arms race is accelerating, with nations increasing defence spending and advancing cyber and AI warfare capabilities. Internally, many countries are also grappling with political polarization, disinformation, and social unrest, compounding global instability. This volatile environment demands robust political risk management, diplomatic engagement, and multilateral cooperation to prevent further escalation and foster global resilience.

Political risk management which hitherto traditionally been focused to analysis of related uncertainties in emerging economies, recent political happenings in the global political frontiers have widened its scope to include the developed economies as also liberal democracies.

Effective political risk management is crucial for businesses and investors to navigate the complexities

of the global economy. By understanding the potential risks and opportunities, adopting a proactive approach, and implementing robust risk management strategies, organizations can minimize losses and capitalize on opportunities. As the global landscape continues to evolve, staying informed, adaptable, and vigilant will be key to managing political risk and achieving long-term success. Collaborating with local entities provides valuable insights into the market and political system. Integrated risk management framework incorporating political risk into the overall Enterprise Risk Management framework provides a holistic view. Utilizing tools like AI and data analytics can enhance monitoring and prediction capabilities.

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Rural Development and Financial Inclusion Integration via Enhanced Connectivity

(India's Direct-to-Device Satellite Communication Initiative in Collaboration with Viasat)



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Abstract:

BSNL's Journey Toward Innovation in Telecommunications

Bharat Sanchar Nigam Limited (BSNL), a State-owned Telecommunications Corporation of India, has functioned as an essential pillar within the National Connectivity infrastructure since its inception in 2000. As the most esteemed Telecommunications entity in India, BSNL has consistently evolved to meet the requirements of a growing and increasingly digital populace. Despite the emergence of Privately-owned Telecommunications companies exerting considerable pressure on BSNL's market presence, the organization has demonstrated notable resilience, directing investments towards Advanced Technological Innovations to maintain its relevance. Currently, BSNL has embarked on a groundbreaking initiative by launching India's first Direct-to-Device (D2D) Satellite Connectivity in collaboration with the U.S. Based Viasat, thereby inaugurating a transformative era for India's Telecommunications sector and positioning BSNL at the forefront of Satellite-based Connectivity.



Financial Inclusion:

National Bank for Agriculture and Rural Development (NABARD) has disseminated the outcomes of its Second All India Rural Financial Inclusion Survey (NAFIS) for the fiscal year 2021-22, which provides fundamental data derived from a survey encompassing 1,00,000 Rural Households, addressing a variety of Economic and Financial Metrics in the aftermath of the COVID-19 Pandemic. Acknowledging the crucial significance of Financial Inclusion in fostering Economic Advancement, NABARD initiated the First Survey for the Agricultural Year (July-June) 2016-17, with the findings made Public in August 2018. In the Intervening Period, the Economy has encountered a multitude of challenges, prompting the implementation of policies aimed at supporting Agriculture and Enhancing Rural Socio-economic Development. The insights from the NAFIS 2021-22 findings may illuminate the progression of Rural Economic and Financial Development Indicators Since 2016-17. The Survey encompassed all 28 States as well as the Union Territories of Jammu & Kashmir and Ladakh.

The Results of NAFIS 2021-22 Elucidate the significant advancements achieved in Rural Financial Inclusion since the Previous Survey conducted in 2016-17. Rural Households have witnessed substantial enhancements in Income, Savings, Insurance Coverage, and Financial

Literacy. Government welfare initiatives such as the Pradhan Mantri Kisan Samman Nidhi, Pradhan Mantri Kisan MaanDhan Yojana, Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Pradhan Mantri Awas Yojana-Gramin (PMAY-G), Pradhan Mantri Gram Sadak Yojana (PMGSY), Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY NRLM), and Deendayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) have significantly augmented the 'Quality of Life' for the Rural Populace. As the accessibility of Financial Services continues to proliferate, there emerges an optimistic perspective for the Economic Empowerment of these Households. The Survey accentuates the necessity for sustained support and investment in Rural Development, thereby establishing a pathway toward a more prosperous and financially secure future for the Rural Demographic of India.

Role FinTech in Financial Inclusion:

India's Fintech Sector is projected to significantly enhance the National Economy by an impressive \$ 400 Billion in the forthcoming years. In contemporary Society, Technology permeates every dimension of our existence, rendering it imperative to harness its capabilities to promote 'Financial Inclusion'.

This phenomenon is accentuated in Nations such

as India, where a substantial number of individuals remain inadequately served by Conventional Banking Infrastructures.

According to the Reserve Bank of India's Annual Financial Inclusion Index (FI-Index), there was a Notable Improvement of 10.5 percent from 2017 to 2021, indicating a deepening of Financial Inclusion within Rural Segments of India. Under the Pradhan Mantri Jan Dhan Yojana (PMJDY), approximately 446.3 Million Accounts have been established, amassing deposits exceeding 1.5 Trillion Rupees over the past years.

The 'Advancement of Technology' in promoting 'Financial Inclusion' necessitates a collaborative endeavour among diverse stakeholders to capitalize on Innovative Solutions, foster Partnerships, and address persisting challenges. Below is a detailed framework for Future Progress:

- ✓ **Innovative Product Development:** FinTech Enterprises alongside Traditional Financial Institutions must persist in innovating and creating products that cater to the distinct requirements of underserved demographics. This encompasses the expansion of Digital Banking Services, the provision of Cost-effective Payment Solutions, and the Formulation of accessible Credit and Savings Instruments.
- ✓ **Tech-driven Credit Scoring:** It is essential to adopt alternative Data Sources and Sophisticated Analytics to Formulate more inclusive Credit Scoring Methodologies. By utilizing Non-traditional Data, such as Mobile Phone Utilization, Utility Payment Histories, and Social Media Interactions, FinTech Organizations can extend Credit Facilities to individuals possessing limited or Non-existent Credit Backgrounds.
- ✓ **Promote Financial Literacy and Education:** There is a pressing need to invest in Financial Literacy initiatives, Educational Materials, and interactive resources to Equip Individuals with the knowledge and competencies necessary for making informed financial choices. By fostering Financial Literacy and Education, individuals can be empowered to manage their Finances Adeptly, evade exploitative practices, and construct a more promising Financial Future.

✓ **Drive Regulatory Innovation and Policy Support:** Engaging with Regulatory Bodies and Policymakers is crucial to Advocate for regulatory frameworks that Nurture Innovation, safeguard Consumer Rights, and Enhance Financial Inclusion. By Cultivating a Conducive Regulatory Landscape, Policymakers can stimulate Fintech Innovation, mitigate associated risks, and ensure that Financial Services remain accessible and inclusive for all constituents.

✓ **Addressing Trust and Security Concerns:** It is imperative to cultivate Trust and Confidence in Digital Financial Services through the implementation of Stringent Security Protocols, Data Protection Standards, and Fraud Deterrent Strategies. Prioritizing Transparency, Accountability, and Consumer Rights is essential to mitigate risks and safeguard the interests of Users.

✓ **Forge Partnerships and Collaborations:** The Synergy between Fintech Entities and various Banks, Microfinance Institutions (MFIs), Governmental Agencies, NGOs, and other Stakeholders is vital to amplifying their influence on 'Financial Inclusion'. Such Partnerships can enable the exchange of Knowledge, Pooling of Resources, and the Co-creation of Innovative Solutions that Tackle Systemic Barriers to Financial Access while promoting Sustainable Development.

By adopting these methodologies and engaging in Co-operative Efforts toward shared objectives, the prospective trajectory for Technological Advancements in Financial Inclusion presents the Potential to establish a more Inclusive, Resilient, and Equitable Financial Ecosystem for all Stakeholders.

Considering all relevant dimensions, India is poised to emerge as a Global Leader in the Domain of Digital Financial Services. The advent of Technology facilitating 'Financial Inclusion' has significantly transformed the Financial Landscape, enabling transactions to be conducted online and allowing individuals to access Banking Services from Remote Locations. This evolution has afforded Numerous Individuals, who were previously marginalized, the opportunity to engage with the Financial System.



Communication Infrastructure Development in Rural India:

Enhancements in Digital Infrastructure, particularly Internet Connectivity and Mobile Network Accessibility, are Critical, especially in Rural and Isolated Regions. Augmented Infrastructure will facilitate Broader adoption of Digital Financial Services and Diminish Access Barriers for Underserved Populations

The contemporary Urban and Rural Landscapes in India exhibit significant disparities in both infrastructure and essential services. While Metropolitan Areas offer affluent amenities and a multitude of employment opportunities, Rural Regions contend with substantial challenges related to poverty and the lack of fundamental services. This situation underscores the necessity for equitable development to bridge the gap and promote more just growth across the Nation.

India, distinguished by its vast geography and diverse topography, encounters an imposing challenge in ensuring equitable Internet access across its heterogeneous regions. Although the Nation has made noteworthy steps in enhancing Digital Connectivity, a substantial proportion of Villages remain excluded from the extensive resources that the Internet provides. This Digital Divide is particularly salient in certain states, especially in remote and Rural Locales. The inconsistency in Internet accessibility and utilization across various demographic segments or geographical areas is commonly referred to as the “Digital Divide.” A multitude of factors, including Infrastructure, Education, Geography, and Socioeconomic status, contribute to this division.

India confronts a significant obstruction in its Digital Transformation endeavour, namely, the inequitable distribution of digital access. Data from the National Sample Survey Office (NSSO) reveals a striking disparity, with a mere 24% of Rural Households possessing Internet Access, in contrast to 66% within Urban Environments. States such as Kerala, Punjab, Tamil Nadu, and Haryana have reported a higher penetration of mobile services within their rural communities.

Facilitating Internet Connectivity in densely populated urban areas is comparatively straightforward. A overabundance of service providers, including Fibernet connections, cable internet, and various alternatives, are readily accessible. However, the provision of internet

access to rural regions poses a distinctly different array of challenges. Internet service providers serving Rural Populations must navigate a series of unique obstacles.

Connectivity’s Future - The Benefits of Dependable Rural Internet:

In geographically isolated areas, the availability of high-speed internet has evolved from being a mere luxury to an indispensable necessity. Small Enterprises can leverage this connectivity for the facilitation of card transactions, thus guaranteeing operational efficacy. Regrettably, considering the financial limitations encountered by service providers, a substantial segment of Rural India persists in suffering from inadequate internet connectivity from the predominant Internet Service Providers (ISPs). Nonetheless, the economic implications of rectifying rural internet accessibility significantly surpass the associated expenditures. To proficiently bridge the digital divide and provide Rural Populations with access to employment opportunities, educational resources, and enhanced digital literacy, it is imperative that Fiber Optic Internet Connectivity be extended into these underprivileged regions.

BSNL has launched India’s first satellite-to-device service in partnership with the US-based satellite company Viasat. This service aims to improve connectivity, particularly in the Nation’s Remote Areas. The innovative feature was showcased at the India Mobile Congress (IMC) 2024 in the Month of October.

During the demonstration, Viasat employed a standard Android smartphone to exemplify the operational capabilities of two-way messaging facilitated by a Satellite Link. Messages were communicated through one of Viasat’s Satellites, which is situated approximately 36,000 kilometres above the Earth’s surface. This technology conforms to the newly established global standards for Non-terrestrial Networks (NTN), thereby permitting devices such as Mobile Phones, Smartwatches, and even Automobiles to establish direct connections with Satellites. The introduction of this service represents a significant progression in extending coverage to Rural and hard-to-reach locales, although numerous practical considerations are still under evaluation prior to its extensive implementation.

Extending Connectivity to the General Public:

BSNL’s Satellite-centric Connectivity possesses the

potential to reach users in Rural Beamlets, Mountainous Terrains, and other isolated localities where Cellular or Wi-Fi Networks are irregular or entirely Non-existent. From adventurers navigating remote areas such as the Spiti Valley to residents of the arid Deserts of Rajasthan, BSNL's Direct-to-Device Service enables continuous communication in Regions that were previously disconnected from the Digital Landscape. Beyond basic communication, the service encompasses essential functionalities, enabling users to make Emergency Calls, send SOS Messages, and even conduct digital transactions through the UPI platform during connectivity disruptions. This aspect is particularly relevant to India's Digital India initiative, as it raises Financial Inclusion by ensuring that Rural and Remote Demographics retain uninterrupted access to Payment Systems, even amidst emergencies.

Viasat's Technological Contribution:

Viasat, the international partner of BSNL, has played a pivotal role in the technological implementation of this satellite connectivity. The Direct-to-Device (D2D) service operates through Non-terrestrial Networks (NTN) that facilitate Bidirectional Communication via Viasat's Geostationary L-Band Satellites, which are positioned approximately 36,000 kilometres above the Earth's Surface. During the IMC 2024 demonstrations, BSNL and Viasat effectively showcased the capabilities of this system, transmitting and receiving messages over vast distances with remarkable precision. The Viasat Satellites, meticulously designed to sustain connections in extreme Geographical Environments, represent a significant advancement in dependable, High-capacity Communication Solutions for scenarios where traditional networks are inadequate. This collaboration exemplifies a meeting of local Expertise and Global Technological Progress, with Viasat's innovations providing the Essential Infrastructure for BSNL's New Service.

Future Implications and Questions Ahead:

Despite the introduction of the D2D Satellite Service by BSNL representing a significant leap forward in connectivity, numerous questions remain regarding its practical implementation. BSNL has yet to provide comprehensive information regarding service plans, pricing frameworks, or accessibility criteria, thereby generating uncertainty regarding whether this service will be incorporated within existing BSNL offerings or

require separate subscriptions. Additionally, it remains unclear whether the Satellite Connectivity will support Non-emergency Communications and standard text messaging services, a consideration that will substantially impact the Service's adoption and Functional Efficacy.

Paving the Way for a Connected India: The launch of India's inaugural Direct-to-Device satellite connectivity by BSNL constitutes a significant achievement, enhancing Communication Capabilities for Millions Residing Outside the reach of conventional Networks. Through this Initiative, BSNL and Viasat are not merely addressing India's Connectivity Challenges but are also laying the groundwork for future Technological Advancements within the Telecommunications Industry. To strengthen India's digital infrastructure, in alignment with National aspirations for inclusive and accessible technology, extending even to the most remote regions. Through this ambitious initiative, BSNL reaffirms its commitment to connecting India in ways that transcend traditional limitations, heralding a new era of digital accessibility and resilience.

Starlink Project:

Starlink is a Satellite Internet Service developed by SpaceX, intended to provide High-speed Internet access on a Global Scale, particularly in Rural and Underserved Areas. It operates through a constellation of Low Earth Orbit (LEO) Satellites, enabling the Direct provision of Internet Signals to users without reliance on conventional terrestrial infrastructure such as Fiber-optic Cables.

This approach significantly reduces inactivity when compared to traditional satellite internet services that rely on Geostationary Satellites positioned at considerably Greater Distances from the Earth. Furthermore, this service aims to deliver reliable Internet Connectivity to remote regions where conventional broadband options are limited or entirely absent. Its rapid deployment capacity makes it especially advantageous in emergency situations or disaster recovery scenarios.

Starlink constitutes a satellite-based internet service initiated by SpaceX, spearheaded by the innovative leadership of Elon Musk. Musk, who has co-founded several prominent enterprises such as Tesla, SpaceX, and the artificial intelligence venture xAI, is positioned to revolutionize internet connectivity through his visionary Starlink project. This initiative aspires to deliver high-



speed internet access to the most remote regions of the planet via a network of satellites functioning in low Earth orbit.

Musk's strategic vision for Starlink encompasses the ambitious goal of establishing connectivity for settlers on Mars, thereby further solidifying his reputation as a forward-thinking entrepreneur who continually expands the boundaries of technological innovation. As of Mid-2024, Starlink has been successfully implemented in over 100 Nations, with Sierra Leone recently acknowledged as the 100th Country to benefit from this Service.

In Conclusion:

As Society progressively embraces the Digital Age, the influence of Technology has profoundly infiltrated every dimension of social existence. Technological Advancements have emerged as crucial tools in addressing some of the most urgent Societal Challenges, such as Inadequate Literacy Rates, Food Insecurity, and the impacts of Climate Change. The Significance of Technological Applications within the Scope of Financial Inclusion is particularly pronounced in current discussions, as they foster inclusive growth by improving the Socio-economic conditions of marginalized Populations.

Financial Inclusion is characterized as the delivery of Accessible, Affordable, and Advantageous Financial Products and Services to both Individuals and Businesses,

encompassing Payments, Transactions, Savings, Credit, and Insurance, all provided in a manner that is both sustainable and ethical.

The importance of Financial Inclusion is highlighted by its ability to promote Social Mobility. These Financial Resources empower individuals and cultivate communities, thereby facilitating economic development. Moreover, Individuals who possess Financial Accounts are more likely to utilize Additional Financial Services such as Credit and Insurance, which subsequently allows them to establish and Grow Businesses, invest in Health or Educational opportunities for themselves or their descendants, Manage Risks, and recover from Financial Setbacks, all of which Collectively improve their Overall "Quality of Life".

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Why Has IT Not Yet Become the New Oil for the Indian Economy?



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The concept of 'IT as the new oil' suggests that information technology, like oil, could be a transformative resource for economic growth. Just as oil has fueled industrial economies, IT has the potential to drive economic growth through its transformative capabilities. India's IT sector, a global powerhouse, has made significant strides but has not yet fully assumed the role of a transformative 'new oil' for the Indian economy due to several structural, social, and economic factors.

India's IT and IT-enabled services (ITES) sector contributes around 7-8% to GDP. IT is a significant export driver, with the IT industry valued at approximately \$250 billion in 2024. However, its impact is concentrated in urban centres such as Bengaluru, Hyderabad, and Pune, leaving vast rural and semi-urban areas largely untouched.

Unlike oil, which permeates multiple sectors (energy, transportation, manufacturing), IT's economic benefits are not as widely distributed across India's diverse economy. India's IT sector employs approximately 5.4 million people directly as of 2024, a significant number but only a fraction of India's total workforce. Most IT

jobs require specialised skills, limiting access for the broader population, particularly in rural areas where 65-70% of Indians live. Oil, by contrast, creates jobs across skill levels (extraction, refining, distribution), making it a broader economic catalyst.

India's IT industry is export-oriented, with over 80% of its revenue coming from foreign clients, particularly in the U.S. and Europe. This external dependence makes the sector vulnerable to global economic fluctuations and limits its ability to act as a self-sustaining engine for domestic economic transformation.

Despite initiatives like Digital India, internet access remains uneven. As of 2024, India has over 900 million internet users; however, rural areas continue to face connectivity issues, with only about 40% of rural households having access to reliable high-speed internet. This digital divide restricts the diffusion of IT-driven benefits, unlike oil, which physically reaches industries nationwide.

A significant portion of India's population lacks digital literacy, which is essential for fully leveraging the benefits of IT services. While urban, educated populations benefit



from IT advancements, the broader population struggles to engage with digital platforms, thereby limiting the transformative potential of IT.

Inconsistent power supply, limited cloud infrastructure in rural areas, and cybersecurity challenges hinder the scalability of IT solutions across critical sectors, including agriculture, healthcare, and education, which are crucial for India's economy.

India's IT sector excels in services such as software development, BPO, and IT consulting, but lags in product innovation and intellectual property creation. Unlike oil, which spurred innovation in petrochemicals and energy technologies, India's IT sector has fostered a robust ecosystem for cutting-edge tech products such as AI, semiconductors, and quantum computing that could drive broader economic transformation.

IT is not into traditional sectors, such as agriculture, which employs nearly 45% of the workforce or manufacturing (which accounts for 15% of GDP). For example, precision agriculture, which utilises AI or IoT, is still in its early stages in India due to high costs and a lack of awareness. Oil, by contrast, directly powers multiple industries, from transportation to manufacturing.

While India has a vibrant startup ecosystem with over 100 unicorns as of 2024, many tech startups focus on consumer-facing apps like e-commerce and fintech rather than transformative technologies that could revolutionise core industries, such as oil did for energy

and manufacturing.

India's evolving data protection laws, such as the Digital Personal Data Protection Act (DPDP) 2023, introduce compliance challenges for IT firms. While necessary, these regulations can slow innovation and increase costs, limiting the sector's ability to grow.

Complex tax structures and bureaucratic red tape deter foreign investment in IT infrastructure and innovation. For instance, delays in approving semiconductor manufacturing projects have hindered India's ability to connect to global tech supply chains.

India's education system struggles to produce enough graduates with advanced skills in AI, machine learning, or cybersecurity. The demand-supply gap in skilled IT professionals limits the sector's ability to achieve sectoral growth.

Countries like China, Israel, and Singapore are investing heavily in next-generation technologies (AI, quantum computing, 5G), outpacing India in innovation-driven IT growth. India's IT sector, which is highly competitive, risks downgrading to low-value service roles rather than leading global tech innovation.

The rise of automation and AI poses a threat to traditional IT jobs, such as coding and BPO services, which form the backbone of India's IT industry. India's rapid upskilling may lead to job losses in the sector, reducing its economic impact.



Global clients are diversifying away from India to mitigate risks, with countries like Vietnam and the Philippines emerging as alternative IT outsourcing hubs. The development could cap India's IT growth path.

Many traditional businesses and communities in India resist adopting IT solutions due to cultural preferences for manual processes or a lack of trust in digital systems. For example, small retailers often prefer cash-based transactions over digital payments.

The concentration of IT benefits in urban areas exacerbates inequality, limiting its ability to transform the broader economy. Oil's universal applicability as a fuel for vehicles and a source of power for industries makes it a more inclusive economic driver.

Oil's value lies in its universal applicability across industries and its role as a physical commodity. IT, while transformative, is an intangible service requiring infrastructure, skills, and adoption to create value, making its impact less immediate and widespread.

Oil can be extracted, refined, and distributed relatively quickly to fuel economic growth and development. IT, however, requires long-term investments in education, infrastructure, and policy to achieve a similar scale, which India is still in the process of developing.

Initiatives such as Digital India, Make in India, and strategic investments in 5G and AI (e.g., the India AI Mission with ₹10,000 crore funding) are crucial to bridge the existing gaps in India's IT sector. The growth of UPI (handling over 130 billion transactions in 2024) and fintech innovations demonstrates the potential of IT to transform specific sectors. However, the need for further strategic investments and innovation is urgent and of utmost importance.

If India is to realise the transformative potential of its IT sector fully, it must address the digital divide. This is not just a matter of economic growth, but also a social responsibility. By investing in tech education and fostering product innovation, India's IT sector could approach the transformative impact of oil. Emerging areas, such as AI, green technology, and smart manufacturing, could position India's IT sector as a global leader in these fields.

IT has not yet become the "new oil" for India's "economy" due to India's limited penetration across sectors,

digital divide, export dependence, and lack of product innovation. While the IT sector is a global success story for India, its transformative potential is constrained by structural challenges and uneven societal adoption. To realise the "IT as oil" vision, India must integrate IT into traditional sectors, bridge the digital divide, and prioritise innovation over service-based growth.

Just as oil fueled industrialisation and economic growth in the 20th century, IT is a key engine of India's modern economy, significantly contributing to GDP, exports, and employment. India has emerged as a major player in IT services, leveraging its skilled workforce and affordability to meet international demand. The scenario is similar to how oil-rich countries have historically benefited from global energy needs.

In the digital age, data and technology are essential for national competitiveness and security, much like energy resources were in the past. India's IT expertise provides a significant strategic advantage.

India's heavy reliance on imports makes it vulnerable to fluctuations in global oil prices and geopolitical tensions. The IT sector offers a distinct form of financial resilience, despite facing challenges such as international economic slowdowns and margin pressures.

The IT sector is currently facing margin pressures due to macroeconomic headwinds and the impact of AI-driven productivity improvements. While AI is creating new opportunities, it also poses challenges in terms of job displacement in routine tasks, necessitating the continuous reskilling of the workforce.

While India still relies on oil for its energy needs, the IT sector has become a more significant driver of economic growth, employment, and global influence. Its export-oriented approach, high-value addition, and ongoing innovation make it a more sustainable and empowering "resource" for India's future.

It is India's story about generating revenue; it's about developing its knowledge economy, fostering innovation, and creating a skilled workforce that positions India firmly on the global stage. Therefore, it is fair to expect that Information Technology positions itself as the "new oil" for India's prosperity.

Tackling Insurance Fraud

Understanding, Detecting, Preventing and Combating Insurance Fraud



CMA Shambhu Nath Roy
Professional Trainer

Millions of insurance applications, most filed electronically from far-flung locations, processed from remote locations by semi-qualified underwriters and loss adjusters hopelessly out-gunned by tech-savvy organized fraudsters operating internationally across lines of business, brands and channels, increasingly costly and intrusive government regulations, acutely demanding impatient customers, etc. all combined define the universe of insurance fraud.

Tackling Insurance Fraud—this article describes a three-stage process to understand, detect, prevent and combat this ‘victimless’ crime.

Key techniques for detecting and preventing fraud such as Rules and Red Flags, Database Searching, Exception Reporting, Query and Analysis, Predictive Modelling, Social Networking Analysis, Text Mining, Voice Stress Analysis and Artificial Intelligence are then discussed.

The role of Concurrent Audit of Insurer’s Information Systems and that of Claims Analytics in tackling insurance fraud and the concomitant techniques of both follow.

Finally, a case study of the highly successful example of the Medical Information Bureau for the North American Life Insurance Industry is presented. At the end, a summary encapsulates the discussion.

Introduction

Those of us, who worked in insurance companies during the ‘good old days’ (when computers, if they were there at all, were little more than glorified electronic typewriters) had a highly-developed sixth sense of ‘smelling’ insurance fraud. Furthermore, those of us who, additionally, had an audit or claim investigation background, had a highly-penetrative hawk eye for (insurance fraud) needles in the

proverbial haystack of voluminous insurance data.

And then the world, as we knew it, changed forever. Millions of insurance applications, most filed electronically from far-flung locations, processed from remote locations by semi-qualified underwriters and loss adjusters hopelessly out-gunned by tech-savvy organized fraudsters operating internationally across lines of business, brands and



channels, increasingly costly and intrusive government regulations, acutely demanding impatient customers, etc. all combined to pen the obituary for those 'good old days'.

Defining Insurance Fraud

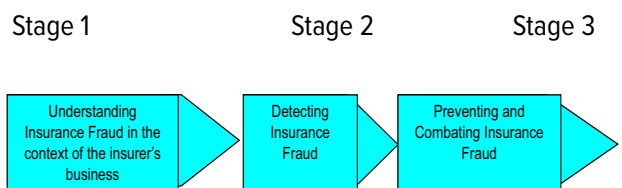
The International Association of Insurance Supervisors (in its Guidance paper on preventing, detecting and remedying fraud in insurance, October 2006) defines Insurance Fraud:

Fraud: an act or omission intended to gain dishonest or unlawful advantage for a party committing the fraud (the fraudster) or for other parties. This may, for example, be achieved by means of:

- ➡ misappropriation of assets and/or insider trading
- ➡ deliberate misrepresentation, concealment, suppression or non-disclosure of one or more material facts relevant to a financial decision, transaction or perception of the insurer's status
- ➡ abuse of responsibility, a position of trust or a

fiduciary relationship.

Tackling Insurance Fraud – A three stage process



The Problem

To the public, insurance fraud appears to be a victimless crime - fair quid pro quo for spiralling premiums and deductibles. These attitudes cost the industry billions of dollars every year. And what costs insurers, also costs the public.

According to the Coalition Against Insurance Fraud, which partners with the Insurance Information Institute (III), property and casualty (P&C) insurance fraud costs approximately \$45 billion annually—losses that must

be made up through increased premiums. And thus the vicious circle spirals upwards. Since insurance fraud is hard to detect, these figures can only hint at the magnitude of the problem.

Fraud losses weaken an insurer's financial stability and cause a failure to offer competitive rates and to underwrite good risks. Fraud losses lead to higher premiums for policyholders. In this "victimless" crime, everybody pays the price.

The response from Governments has comprised of new regulations and centralized fraud bureaus. Insurers have responded by establishing Special Investigative Units (SIUs) equipped with computer-based tools to detect and prevent fraud. Yet the problem continues to expand exponentially.

The reasons are not far to seek. Firstly, many insurers believe that fraud detection is necessarily expensive and fraught with the risk of antagonising customers, including innocent ones. They choose the easy way out by factoring in a certain amount of expected fraud loss into their premiums.

Second, insurance data often resides in silos, disabling a complete view of a customer, account history or transaction path. How can insurers then identify separate entities operating in collusion, or identify patterns that would only be suspicious when viewed from a broader perspective?

To top this, today's resourceful fraudsters understand fraud detection systems well, often recruit insiders into their schemes, and proactively sound out and exploit thresholds and detection rules to avoid the lid being blown. Stage-managed and induced accidents, organized use of accident management companies and crooked doctors, online global enterprises, Internet facelessness, etc. have all conspired to ensure that insurance fraud remains a low-risk, high-return criminal activity.

Executive Summary

The many faces of the faceless fraud

Given that 7 percent of normal people, without a criminal profile, have admitted making a fraudulent claim, then the number that actually have is probably much higher. To understand the whole picture of insurance fraud, it is

necessary first to appreciate that there are two distinctly different types of fraud:

- Amateur fraud - the perpetrator is usually an individual who basically has a chance to inflate a claim or get an exaggerated estimate for losses or repairs. Usually such a person is not operating with an insider's knowledge of the insurer's fraud detection systems or thresholds. Such frauds are more in number but, individually taken, not financially significant.
- Organized fraud is often perpetrated by organized groups with multiple, false identities, targeting multiple organizations or brands, using sophisticated techniques as aforesaid in addition to placing or grooming insiders to help them defraud the company through several channels at once.

Such frauds are far less in number but, individually taken, financially destabilizing. Insurers need more than traditional methods and systems if they expect to combat this new breed of fraudster and reverse this trend.

After understanding insurance fraud in general, the following sections of this article give detailed fraud alerts in the context of specific lines of business and in specific situations.

The many techniques of tackling the fraud

Key techniques for detecting and preventing fraud such as Rules and Red Flags, Database Searching, Exception Reporting, Query and Analysis, Predictive Modelling, Social Networking Analysis, Text Mining, Voice Stress Analysis and Artificial Intelligence are then discussed.

The role of Concurrent Audit of Insurer's Information Systems and that of Claims Analytics in tackling insurance fraud and the concomitant techniques of both follow.

Finally, a case study of the highly successful example of the Medical Information Bureau for the North American Life Insurance Industry is presented.

Fraud Alerts: Insurance

All Insurance

- ➡ Policy is in partner's name
- ➡ Damage occurred shortly after:



- The insurance coverage started (has the ink barely dried?)
- The insured sum was increased
- Changes were made to the policy conditions/ clauses
- Consequential loss insurance coverage was purchased
- Conversion of obsolete risks into new-for-old insurance coverage
- Payment of an overdue premium
- ➔ Damage occurs during provisional coverage period
- ➔ The date of the damage closely precedes the cancellation date
- ➔ The insured party has contracted the agent/ company shortly before the damage occurred to enquire about the scope of the coverage
- ➔ Poor history regarding damages, whether or not in combination with a rising debt burden from case to case
- ➔ There is a big discrepancy between the date the request was received and the desired commencement date
- ➔ The insured party gave a fictitious address
- ➔ The insured party's telephone number does not correspond with the residence
- ➔ The insured party wants to handle everything personally
- ➔ The insured party does not want those in his/her environment to know anything has happened
- ➔ The insured party wants to be paid in cash
- ➔ Uncharacteristic willingness to settle claims. The insured party is (too) willing to settle for less
- ➔ The insured party repeatedly demands fast settlement or does not react at all
- ➔ The insured party regularly contacts the insurance company to find out about the current state of affairs
- ➔ The insured party wants to avoid clear written communication and does everything possible to arrange all matters by telephone or in person
- ➔ The insured party only provides spotty cooperation during reconstruction
- ➔ The insured party provides evasive answers to questions
- ➔ The insured party can already give a very detailed description of the goods and services during the 1st line declaration
- ➔ The sequence of the list of goods/ damage on the declaration is exactly the same as that in the assessment/ appraisal report
- ➔ The insured party's financial situation is poor (no fixed work, problems at home, etc.)
- ➔ Impossible or improbable modus operandi
- ➔ The damage is demonstrated using a detailed photo 'report' of the stolen/ missing goods
- ➔ No invoices/proof of purchase can be shown for expensive items, but these are available for the cheaper items
- ➔ The proofs of purchase are not in the insured party's name, or this was filled in later
- ➔ No proofs of purchase or these are poorly specified
- ➔ Changes made to or tampering with the proofs of purchase
- ➔ The description of the damage does not correspond with the facts
- ➔ Only the copies of the proofs of purchase can be presented
- ➔ Neighbours, friends, acquaintances and family are not aware of the damage
- ➔ The insured party is more aware (too aware) of the



policy conditions than normal

- ➔ There is a discrepancy between the declarations and the information the police, the appraiser and third parties have
- ➔ The insured party has made no effort to prevent or limit the damage
- ➔ The insured party has reported regular (dubious) cases of damage
- ➔ There is a specific relationship between the claims submitted
- ➔ The damage is considerably higher than after the initial damage report
- ➔ The request form is not filled in completely or is not signed
- ➔ Failure to sign the damage claim and/ or the specification lists
- ➔ Discrepancies in the specifications on the request form/ damage claim form
- ➔ The insured party demands remuneration of the purchase price even though the market price for the item has fallen
- ➔ The insured party has not submitted a police report abroad (if the damage occurred abroad)
- ➔ The insured party claims seasonal items outside the season

Receipts/ invoices

- ➔ The insured party only has photocopies of the receipts/ invoices for all or part of the goods claimed
- ➔ The insured party shows new receipts for old goods (clean, unfolded)
- ➔ Items on the receipts have been crossed off
- ➔ Changes have been made to dates and/ or amounts on the receipts
- ➔ Discrepancies in handwriting or fonts on receipts from the same supplier

- ➔ The receipts (invoice) are not in the insured parties name or this was added later
- ➔ The date on the receipt does not make sense or has been modified
- ➔ The invoice is for a non-existing or bankrupt company
- ➔ Invoices with different dates are numbered consecutively
- ➔ The currency is not included of foreign invoices
- ➔ 'Pro forma' or tender is printed on the invoices

When taking out a policy

- ➔ Documents/ correspondence with:
 - Overwritten/ corrections (e.g. address/ signature/ amounts)
 - Different handwriting
 - No original document or an exceptional request
- ➔ The requesting party is unknown; the signature is missing
- ➔ No address data or only a post office box number
- ➔ The insurance does not appear to be useful or applicable to the insured party or the insured incident
- ➔ Exceptional insured amount/premium for this profession, function or group
- ➔ The identity of the policy personnel is not specified
- ➔ The insured party and the agent are or are represented by the same person and/ or have the same postal code
- ➔ Premium exemption or cancellation immediately after the commissioned earn back period
- ➔ Request just below the approval limit
- ➔ Rollover with full commission



In case of payment

- ➔ Documents/ correspondence with:
 - Overwritten/corrections
 - Different handwriting
 - No original or exceptional documentary evidence
- ➔ Requestor is unknown, signature is missing
- ➔ Unclear study declaration
- ➔ No address data or only a post office box
- ➔ A request for payment to a party other than the payee without permission of the payee
- ➔ A request that the payment be paid to multiple accounts
- ➔ The identity of the payee is not specified
- ➔ The relationship with the policy personnel is unclear
- ➔ Death/ disability within a year of the policy being concluded or increased by more than 25%
- ➔ Disability claim within one year due to bankruptcy

At the portfolio level

- ➔ An agent's portfolio contains a (relatively) large amount of insurance:
 - For which the commission is higher than the initial premium
 - With a backlog in premium payment
 - With payments within 2 years of the policy start date
- ➔ With unnatural lapses (after the commission payback period)
- ➔ Exceptionally large increase in production per agent
- ➔ Many roll-overs with complete commission
- ➔ Increase in production without a demonstrable reason

- ➔ Agents frequently change name or address

General (or Non-life or Property and Casualty) Insurance Motor

- ➔ Damage shortly after payment of an already long overdue premium
- ➔ Vehicle has a different license number
- ➔ Vehicle was stolen shortly before the end of the conversion period for new-for-old insurance
- ➔ License plate has only been in the party's name for a short time
- ➔ Theft of a vehicle where all parts of the vehicle's registration certificate were in the vehicle, or these were lost before the vehicle was stolen
- ➔ Only 1 key was turned in
- ➔ The keys turned in are not the original keys
- ➔ Vague story about key discipline
- ➔ Submission of copies of evidentiary documents, including the declaration
- ➔ An activated alarm did not work
- ➔ Vehicle is recovered without any damage whatsoever
- ➔ Vehicle is recovered with:
 - Mechanical defects
 - Valuable objects/valuable papers still in car
- ➔ Owner/insured has injuries at the time the declaration is made
- ➔ Age of the insured party, social position in relation to the type of vehicle.

Vehicle (Limited Liability Insurance) damage

- ➔ One of the parties involved indicates that he suspects deliberate intent
- ➔ The police were not called in case of a collision involving considerable damage
- ➔ No alarm service was called in



- ➔ No salvage costs are declared (in case of substantial damage)
- ➔ One of the parties has a rental car
- ➔ The driver of the rental car immediately confesses his/her guilt
- ➔ There is a relationship between the two parties
- ➔ Both parties are foreigners from the same country
- ➔ Multiple identical witness statements are submitted
- ➔ There are substantial differences between the witness statements submitted
- ➔ There was no trace of an accident at the place where the collision (allegedly) occurred
- ➔ The collision took place at a deserted location
- ➔ The damage to the two cars involved does not make sense (one is severely damaged, the other only slightly)
- ➔ The damaged cars are both sent to the same repair shop
- ➔ There is severe damage without any personal injury
- ➔ There is a lack of clarity regarding who was driving
- ➔ Old 'wreck' hits new expensive vehicle
- ➔ Considerable damage but no collision between the parties involved (e.g. an evasive manoeuvre)
- ➔ Automobile mechanical failure in cases of stolen cars
- ➔ Swoop & Swat; slowing in traffic causing the vehicle behind to rear end.

Fire

- ➔ Multiple sources of the fire discovered
- ➔ The cause of the fire is unknown/ dubious
- ➔ In case of arson, there is no sign of forced entry
- ➔ The damaged premises were unoccupied at the

time of the event and were being supervised

- ➔ The building was not connected to public utilities (related to above)
- ➔ Items were removed prior to the fire, such as personal possessions, pets
- ➔ The building has been for sale for some time
- ➔ The company wants to expand/ modernize
- ➔ Poor financial situation
- ➔ The fire was not detected by the fire alarm system
- ➔ The fire alarm system was (coincidentally) not turned on
- ➔ The fire alarm system was on, but was 'shielded' by inventory
- ➔ The fire was discovered shortly after the insured party or another party had left the building

Health

Pre-termination injury

Wrong diagnosis

The amounts to be paid on the invoices have been tampered with

No communication with the damage service/ alarm service

The prescriptions have been tampered with by the pharmacist

Life Insurance

Any one of

- ➔ Insured party dies abroad
- ➔ Body not found or cannot be identified
- (Original) Proof of death cannot be presented
- ➔ Claims specifying a criminal offence or suicide as the cause of death within 2 years of the policy being taken out



- ➡ Amounts to be paid to a party other than the insured party, the party who took out the policy or one of the designated payees

Any combination of

- ➡ The claim is submitted within 3 years after the insurance start date or the date on which the insured amount was increased
- ➡ The premium or purchase price is paid in cash
- ➡ The amount to be paid out is extremely high, but there is no mortgage or life insurance clause (the amount insured is not proportional to the living standard)
- ➡ No form of “proof of identity” is submitted
- ➡ Significant difference between the age of the insured party and the payee
- ➡ Insured parties/ next of kin only provide erratic assistance in obtaining further information
- ➡ Policies cannot be handed over
- ➡ Errors in documents

When taking out (or modifying) life insurance

- ➡ Request form, health certificate or any other document is:
 - Not filled in properly
 - Contains corrections/ improvements
 - Contains a different signature
 - Contains incorrect addresses
- ➡ The relationship between the insured party, the policyholder and/ or the person who pays the premium is unclear
- ➡ The policy holder or the insured party only gives a post office address
- ➡ Insured amounts are not in proportion to the request of the insured party/ the policy holder/ the party who pays the premium
- ➡ Identity of the policy holder, insured party and/ or

party who pays the premium cannot be specified

- ➡ Policy holder and agent are represented by the same person/ have the same mailing address
- ➡ There are multiple policies in the name of the insured party/ payee with different addresses
- ➡ The requested insured amount is just below the approval limit
- ➡ A high premium amount is paid in
 - Cash
 - Foreign currency
 - Via a foreign bank account
- ➡ Policy holder accepts unfavourable conditions
- ➡ A policy with an exceptionally high insured amount has been written by an agent with a small portfolio
- ➡ Agent requests that all commissions be paid immediately or requests an advance payment
- ➡ Policy holder/insured party lives outside the agent's region

In case of Payment

- ➡ Proof of payment cannot be authenticated
- ➡ The cause of death/ disability is suspect
- ➡ The request for buyout is signed by an unauthorized party
- ➡ Payment/ premium waiver due to disability takes place within 2 years of the insurance start date
- ➡ Request for payment in cash, by cheque, via a foreign bank and/or distributed over multiple bank accounts
- ➡ Request for payment and/ or correspondence via the agent
- ➡ Change of payee/ insured amount shortly before death/ disability
- ➡ Periodic payments to insured parties who are



exceptionally old

- ➡ density of the payee is not specified
- ➡ Payment is rejected because the name of the payee and the bank account number do not correspond

Key techniques for detecting and preventing fraud

Multiple techniques, working in tandem, offer the best chance for detecting both amateur and organized fraud. Here is a look at prevailing WFDPs (Weapons of Fraud Detection and Prevention)—techniques that insurers should include in their arsenal of anti-fraud strategies.

Rules and red flags

Identify specific patterns and highlight activities that look suspicious.

Rules-based systems test each transaction against a predefined set of algorithms or business rules to detect known types of fraud based on specific patterns of activity. These systems flag any claims that look suspicious due to their aggregate scores or relation to threshold values.

Red-flagged claims are then investigated more thoroughly by experienced adjusters. The advantage of the red-flag approach is its simplicity. There are many disadvantages to a manual red-flag system, which puts the burden of detection on overworked adjusters. Nonetheless, rules and red flags are a good first line of defence, screening claims to funnel into further automated fraud-detection methods.

Database searching

Pool data with other database subscribers to broaden claims investigations.

Claims that have been flagged for review can be further investigated using database searching. With this approach, companies subscribe to database search services offered by various vendors. Subscribers submit skeletal data of adjudicated claims and then have access to data submitted by other members of the service. The availability of the huge bank of collective data, powered by search interfaces, allows adjusters to view massive amounts of information from numerous sources.

What suspicious patterns become evident now that you have a broader perspective? A clear advantage of searching with third-party data is that you can identify

patterns of fraud beyond your own organization. But it is only effective if you can find a positive match in the third-party database. Absence of a record is not a meaningful finding, nor does a positive finding indicate intent to defraud. Adjusters must be skilled at reviewing and interpreting data to effectively use these services.

Exception reporting

Report events that exceed a threshold for a particular claims benchmark.

With exception reporting, key performance indicators (KPIs) associated with tasks or events are baselined and thresholds set. When a threshold for a particular measure is exceeded, then the event is reported. Outliers or anomalies could indicate a new or previously unknown pattern of fraud.

Once in place, the system functions automatically. Adjuster activities are monitored, and problems can be identified and corrected.

On the negative side, it can be difficult to determine what to measure, what time period to use and appropriate threshold levels. Still, exception reporting is an effective tool for internal management.

Query and analysis

Examine large volumes of adjudicated claims to find discrepancies.

Another anti-fraud tool combines ad hoc query and online analytical processing (OLAP), enabled by databases that summarize across many different dimensions. OLAP reporting enables analysts to search through huge volumes of adjudicated claims, make comparisons, identify exceptions and find unusual situations in a dynamic environment. An experienced analyst can take the data and quickly generate reports that identify potential problems and direct future investigations more effectively. Two types of analysis are commonly used in fraud detection:

- Profiling models the behaviour of groups or individuals, building models of usual and customary behaviour from history, either for that individual or for peer groups.
- Clustering identifies abnormal groups of claims, either because they are outliers in every respect,



abnormal in relation to a selected base (such as customer segment or profile), or contain values that are abnormal in relation to each other. For instance, a 20-year-old driver with a Porsche might warrant a closer look.

The underlying principle is that fraudulent claims, when visualized in cluster analysis, will group together in ways quite different from the overall norm. Alternatively, you might identify records that don't fit well into any cluster. These outliers could also represent cases of fraud.

Because this query-and-analysis process is interactive, it requires intervention from an analyst who must have a strong understanding of the data.

Predictive modelling

Use data mining tools to build models to produce fraud-propensity scores.

In recent years, many insurers have turned to predictive modelling processes, reducing the need for tedious hands-on account management. Quantitative analysts use data-mining tools and build programs that produce fraud propensity scores. Adjusters simply enter data, and claims are automatically scored for their likelihood to be fraudulent and made available for review.

Predictive modelling tends to be more accurate than other fraud detection methods. Information can be collected and cross-referenced from a variety of sources. As criminals adopt new approaches, models must be updated to reflect new patterns.

Social networking analysis

Model relationships between entities to uncover abnormal claims patterns.

Social networking analysis has proven effective in identifying organized fraud activities by modelling relationships between entities in claims. Entities may be defined as locations, service providers, telephone numbers and Vehicle Identification Numbers – to name just a few. Tools can be tuned to display link frequencies that exceed a programmed threshold. Large volumes of seemingly unrelated claims can be checked and then patterns and problems identified.

Social networking analysis can be fully automated, with the system continuously updating the interrelated

networks with new claims and policies and re-scoring for fraud. If a network score indicates fraud, then this can be used to “red flag” the new claim as it is notified and the system matches it to the network. Investigators can search across the full customer base of claims and policies in seconds and turn up visual indications of connections and overlaps among them. However, a skilled analyst is needed to put all the pieces of the puzzle together.

Insurers have successfully used link analysis to identify the presence of organized fraud rings and take appropriate action. Furthermore, using these linking and network scoring techniques, not only can insurers avoid paying fraudulent claims at first notification, but they can also check new policies for connection to historic fraud to avoid proliferation of fraud.

Text mining

Capitalize on the value hidden in textual information.

The claims process collects and generates large volumes of text-based information, such as adjuster notes, e-mails, customer services calls and claimant interviews. In fact, unstructured data can represent up to 80 percent of claims data.

Text mining software accesses the unstructured text, parses it to distil meaningful data, and analyses the newly created data to gain a deeper understanding of the claim. For example, it would be suspicious if you get a flood damage claim from someone in an area hit by a hurricane, but none of the neighbours have made a claim.

Voice stress analysis

Identify stress levels in claimant interviews.

Voice stress analysis is a relatively new and controversial lie detection technology that measures the vibrations in the human voice. The concept is based on the observation that when people lie, their voices tend to rise in frequency.

Tension throughout the body tightens sensitive vocal cords and produces higher-pitched sounds that can be measured by machines. The technique does not detect truth per se, but it measures fear, unease or other emotional stress about the questions being asked.

Insurance companies are starting to use this technology to assess the stress levels of a claimant during interviews and even to evaluate the responses given by an insured



party during customer service calls.

Artificial Intelligence

Analyse vast datasets and identify patterns using algorithms and machine learning.

Artificial Intelligence (AI) in insurance fraud detection uses algorithms and machine learning to analyse vast datasets and identify patterns indicating fraudulent activity, leading to more efficient, real-time, and proactive fraud prevention.

AI enables insurers to analyse diverse data sources, such as policyholder details, historical claims, and external data, to flag suspicious patterns, detect complex fraud rings, and automate the review of potential fraud cases, thereby reducing costs and improving customer experience.

Concurrent Audit

Definition

Concurrent Audit is a systematic and timely examination of financial transactions on a regular basis to ensure accuracy, authenticity, compliance with procedures and guidelines. Concurrent audit is an examination, which is contemporaneous with the occurrence of transactions or is carried out as near thereto as possible.

The internal audit department of the insurance company or its external auditors may also use Concurrent Audit Techniques for tackling insurance fraud sought to be perpetrated both by outsiders and insiders, many a time by both in collusion.

Relevance of Concurrent Audit Techniques for tackling Insurance Fraud

Millions of dollars' worth of transactions can be processed in an online insurance system without leaving a satisfactory audit trail. Evidence gathered after data processing is insufficient for audit purposes. Since many online insurance systems process transactions continuously, it is difficult or impossible to stop the system in order to perform audit tests. When it is needed to monitor continually the system and collect audit evidence while live data are processed during regular operating hours, concurrent audit techniques are used. These techniques perform audit functions; they also report test results to the auditor and store the evidence collected for

the auditor's review.

Common Concurrent Audit Techniques

Commonly used concurrent audit techniques for insurers' information systems are discussed below:

- ➔ An Integrated Test Facility Technique (ITF) places a small set of fictitious records in the master files. Processing test transactions to update these dummy records will not affect the actual records. Since fictitious and actual records are processed together, company employees usually remain unaware that this testing is taking place. The system must distinguish ITF records from actual records, collect information on the effects of the test transactions and report the results. The auditor compares processing and expected results in order to verify that the system and its controls are operating correctly.
- ➔ ITF technique can be used effectively for both batch processing system as well as online processing system.
- ➔ The Snapshot Technique examines the way transactions are processed. Selected transactions are marked with a special code that triggers the snapshot process. Audit modules in the program record these transactions and their master file records before and after processing. Snapshot data are recorded in a special file and reviewed by the auditor to verify that all processing steps have been properly executed.
- ➔ System Control Audit Review File (SCARF) uses embedded audit modules to monitor continuously transaction activity and collect data on transactions with special audit significance. The data are recorded in a SCARF file. Transactions that are generally recorded in a SCARF file include those exceeding a specified limit, inactive accounts, deviating from insurance company policy, or containing write-downs of asset values, etc. Periodically, the auditor examines the SCARF file to identify questionable transactions and performs the necessary follow-up investigations.
- ➔ Audit hooks are audit routines that flag suspicious transactions. For example, internal auditors at

an Insurance Company determined that their policyholder system was vulnerable to fraud every time a policyholder changed his or her name or address and then subsequently withdrew funds from the policy. They devised a system of audit hooks to tag records with a name or address change. The internal audit department will investigate these tagged records for fraud. When audit hooks are employed, auditors can be informed of questionable transactions as soon as they occur. This approach of real-time notification displays a message on the auditor's terminal.

- ➔ Continuous and Intermittent Simulation (CIS) module that is embedded in a data base management system, examines all transactions that update the DBMS using criteria similar to SCARF. If a transaction has special audit significance, the module independently processes the data, records the results and compares them with those obtained by DBMS. If any discrepancies exist, the details are written on to an audit log for subsequent investigation. In case of serious discrepancies, CIS may prevent the DBMS from executing the update process.

Culling Clues from Claims

Of all the processes inherent to insurance, none produces such a voluminous amount of disparate data as claims. Within that data, like needles in a haystack, lie keys to unravelling Insurance Fraud. Stuart Rose, global insurance marketing manager at Cary, N.C.-based SAS, in an interview to Insurance Networking News published on November 1, 2008, explained how claims analytics can be used to unlock efficiencies (and hidden fraud) in the process. Excerpts therefrom:

"Claims analytics is the ability to analyse claims data at each stage in the claims cycle, from entry of first notice of loss through to payout, to make the right decision at the right time to the right party. Rather than analysing one case at a time—based only on the current information at hand—analytics gives insurers added perspective by allowing them to view claims "in context" by comparing them with previous claims settlements in their database.

Predictive analytics can enhance the claims process in multiple areas such as optimizing claims settlements, improving loss reserving, preventing fraud, discovering

unforeseen subrogation opportunities and better resource allocation that ultimately leads to increased customer satisfaction.

... It is possible to ... benchmark each claim based on similar characteristics and, hence, reduce the propensity for claims padding.

Another major problem facing insurance companies today, often a limitation with legacy claims systems, is that a large amount of the information relating to claims is considered unstructured data, i.e. adjuster notes, medical records and police reports.

Using text mining capabilities helps insurers to analyse this invaluable data, improving the benefits that can be achieved from implementing claims analytics. For example, an adjuster will not be aware that his assigned case involves a medical specialist who bills for a large number of treatments as compared to another medical specialist billing for similar injuries. But if the insurer can analyse the text embedded in medical claims, the possibility of fraud or claims padding becomes evident, and can be the basis of further investigation.

The return on investment for claims analytics is extremely compelling, especially with the ability to dramatically reduce insurers claims expenses and exposure to fraud."

The North American Life Insurance Industry Example

Over 550 US and Canadian life and health insurance companies are members of an insurance trade association, the Medical Information Bureau (MIB Group Inc), which operates the industry's largest fraud detection service. That service of the MIB saves insurers over USD 800 million per annum in fraud losses.

The MIB ensures basic fraud protection and risk assessment information to underwriters. The mode is through an alert which enables queries about an applicant's insurance history and personal details.

It is an input as well as an output system. Members may search the database as explained above but they are also expected to update the database, during the underwriting phase, if fraud cases are uncovered.

Here is an overview of the system:



- ➡ The applicant submits a new application to BIMA Life Insurance Company. He has to sign an authorization form that establishes the confidential exchange of coded medical information. The coding process is according to legal and privacy regulations. It only contains sources of information permitted. Such sources should be only for the proposed insured, factual and accurate.
- ➡ BIMA Life searches the MIB database for insurance history and medical information.
- ➡ A coded report is received back by BIMA Life. If the report contains any risk alert, the underwriter confirms the code validity of the code. He then verifies the impairment severity or applies BIMA Life company specific underwriting action. If the underwriter comes across any additional risk information, he uploads coded information back to the database.

The industry believes the cost-benefit ratio of the service to be 1:46 USD. For approximately 16 to 17 million applications per annum, the fraud detection technology system delivers 800 million USD per annum savings in claims outgo. This helps to keep premiums within reasonable limits or stable.

The MIB Group succeeds basically by satiating concerns over data protection and confidentiality. Applicants authorize member companies to use their data. While applying, they are aware that information discovered during underwriting will be made available to another member company to which the consumers may apply in future. This implied consent satisfies data regulations.

Moreover, the MIB (North American operation) is identified in the “Authorization to Obtain Information” as an information source. This must be signed by each individual applicant. This has a salutary and deterrent effect.

It balances good governance and data protection. It provides fair product pricing for the consumer and protection for the industry.

The North American experience is proof that, even across borders of geography and statute, the extent of company collaboration, that is vital to tackle fraud, can be attained.

Already, over 550 life insurers and reinsurers, including European owned conglomerates by the dozens, have integrated this type of highly beneficial technology into their underwriting and business processing workflows. Many use this to process millions of transactions every year—without incident.

Summary

Scanning insurance data with a fine toothcomb will not help uncover insurance fraud. It will only antagonise honest policyholders and prove costly and ineffectual.

Fraud bleeds profits. Outdated fraud management practices make an insurance company lose competitive advantage. Companies that have invested in automated fraud detection systems, especially those that have implemented all or a combination of the techniques covered in this article have been well rewarded for their decisions.

The time is right for insurance companies to invest in technology to prevent claims fraud before it reaches epidemic proportions. Technology-based tools to fight insurance fraud can be used individually or in combination to help companies detect and prevent criminal claim activities.

Some fraud-detection techniques screen claims during processing and help prevent improper payments. Others involve retrospective analysis of adjudicated claims and help uncover the activities of fraud rings, internal fraud and leakage. Together, these techniques are powerful deterrents for would-be fraudsters who seek to profit at the expense of insurance companies and their good policyholders.

It is impossible to predict future trends in insurance fraud activities. Fraudsters continually become more inventive and resourceful—and evasive. Push hard in one area, and they will shift their focus somewhere else. Change thresholds and models, and they will soon discover the new limits and skirt around them.

Insurers have the means to become more inventive and resourceful too. By using a combination of approaches – and by exploiting the advantages of analytic-based techniques – they have more opportunity than ever to recognize fraud and stop it before it occurs.



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Is Artificial Intelligence (AI) 'Chatbots' Cost Effective? (Chatbots are 'Alternate Delivery Channel' in Banking Sector)



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Abstract:

As Banking Chatbots become progressively prevalent within the Technological frameworks of financial institutions, more defined expectations regarding their functionalities have been articulated. It is an exhilarating phenomenon when Medium Size Banks experience rapid growth; however, the process of scaling a Call Center can prove to be a financially burdensome endeavour. The implementation of an 'AI Chatbot' may serve as a Viable Solution to mitigate the challenges associated with scaling, in a manner that is both Cost-effective and Beneficial to an exceptional Customer Experience.

Essential considerations for Medium Size Banks aiming to expand their customer service workforce encompass customer expectations alongside the financial implications of such expansion. A comparative analysis of brands reveals that 90% of American consumers incorporate customer service into their decision-making criteria. An unsatisfactory customer experience has resulted in 78% of consumers abandoning a purchase, while 48% have opted to switch brands in pursuit of superior support.

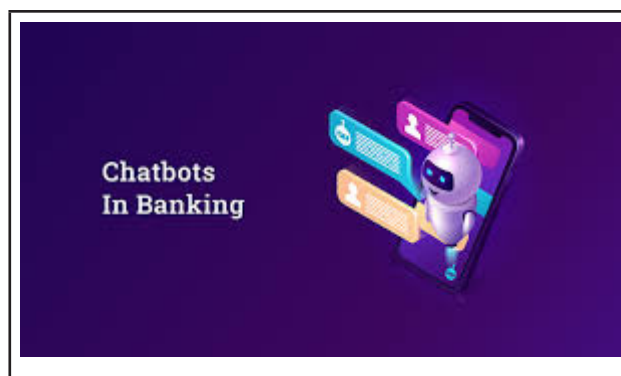


Consumer expectations have reached unprecedented levels, necessitating Prompt, Efficient, and Seamless 24/7 support across a multitude of Devices, Channels, and Touchpoints.

Money Talks: In the United Kingdom, the average remuneration for a customer service call center representative stands at £19,275. The cost of workstations varies between £2,487 and £15,984, contingent upon geographical location and the nature of the business, whereas the average expenditure on hardware and software per agent is approximately £2,115. Additionally, it may become imperative to expand office space to accommodate the influx of new personnel. The processes of recruiting and training staff can also be both time-intensive and financially demanding. Call center representatives are required to be well-versed in company policies and procedures, product offerings, customer requirements, legal considerations, and customer service best practices.

One strategic approach that Banks may consider to optimize their call center expenditures is the adoption of an 'AI chatbot' as an alternative to augmenting the number of human customer service representatives. Chatbots present a commendable scalability solution, as they possess the capacity to manage a substantial volume of inquiries at a significantly lower cost than their human counterparts. They are available around the clock and effectively minimize customer wait times, even during peak periods.

Time: The average duration of hold time in a call center is approximately 13 minutes. For the majority of consumers, this is deemed unacceptable. Research indicates that 32.3% of callers assert that they should never be required to wait on hold, while 27.6% indicate a willingness to wait for a maximum of one minute. Furthermore, 30.2% state that they would tolerate a wait of one to five minutes. Extended wait times can engender customer frustration and dissatisfaction, which may ultimately jeopardize both reputation and financial performance.



Collectively, chatbots have the potential to decrease customer service costs by as much as 30% by addressing up to 80% of routine inquiries.

Flying High: In light of these considerable challenges, 80% of Medium-sized Banks are contemplating the deployment of AI chatbots. To manage routine inquiries such as frequently asked questions, chatbots can autonomously respond to user inquiries utilizing pre-formulated responses. This capability enables businesses to conserve time and resources while enhancing customer response times. This is of paramount importance, as 82% of consumers anticipate an immediate reply to inquiries related to Sales or Marketing.

Personality and Personalisation: The personality of a company brand may serve as a pivotal differentiator within the competitive landscape of business. The advantageous aspect is that it is feasible to imbue an AI Chatbot with a distinctive personality that authentically embodies the Brand's Voice and Identity. An effective chatbot should feature a customizable interface, thereby allowing alignment with the aesthetic and experiential attributes of the Brand. This approach guarantees a consistent user experience while reinforcing the overall Brand Image.

Every Language: Advanced AI Chatbots, such as those developed by some reputed IT Companies, can deliver support in Multiple Languages, which proves particularly advantageous for businesses aspiring to broaden their customer base on a Global Scale and penetrate New Markets. A prime example is a Tourism Company, as the intrinsic nature of their operations is Global; consequently, their Chatbot can effectively address the needs of Tourists from various countries Traveling to a wide array of International Destinations.

Data Driven: A Medium Size Digital Banks can deploy AI chatbots to scrutinize patterns and trends within customer feedback, thereby identifying potential areas for enhancement in their product offerings and services. Additionally, they can mitigate the volume of inquiries directed to Digital Banking call centres by furnishing customers with real-time updates concerning their queries, tracking of transactions, and addressing product-related questions.



What is the best AI Chatbots?

Research Findings

According to research conducted by ‘Juniper Networks’, it is projected that Business Enterprises across diverse sectors will collectively save in excess of \$8 billion annually through the integration of Chatbots within their Call Centres.

Service Announcements: An AI-driven Chatbot is capable of transmitting broadcast messages to users who have consented to receive updates from the Business Organizations including Banks. This functionality can be utilized to inform users regarding Novel Products, Promotional Offers, and events, thereby conserving the Time and effort of Sales and Customer Support call center personnel, enhancing overall Productivity, Diminishing Wait Times, and elevating Customer Satisfaction. Additionally, it can assume certain responsibilities Typically held by Sales Contact Center representatives by engaging in Selling, cross-selling, and Upselling activities. For instance, the Coca-Cola Chatbot provides Personalized Product recommendations, grants access to promotional deals, and even facilitates the Direct Ordering of Coca-Cola Products through the Chatbot Interface.

Role of Chatbot in Banking Sector:

Banking Sector aspire for their bots to exhibit attributes of approachability, proficiency, adaptability, and security in order to facilitate informed, human-like interactions across a multitude of channels.

Familiar: The significance of personalization is paramount in augmenting chatbot interactions. Through the incorporation of user-specific data, bots are capable of customizing dialogues to align with the preferences and historical context of each user. This could entail referencing recent transactions, account balances, or prior

interactions to enhance the relevance of conversations. Moreover, the integration of humor and empathy serves to infuse a human element into communications, fostering a deeper sense of connection among customers.

Transactional: The functionalities typically encompassed by these systems include fundamental operations such as balance inquiries, fund transfers, bill payments, and transaction reviews. Users ought to have the capability to initiate these interactions effortlessly through natural language commands or guided prompts embedded within the chat interface. Advanced bots are equipped to facilitate more intricate transactions, such as establishing recurring payments, executing wire transfers, or applying for loans and credit cards.

On-brand: Upon the deployment of the chatbot, it is imperative to delineate explicit guidelines pertaining to the bot’s linguistic style, tone, and visual representation. Whether the objective is to project professionalism, trustworthiness, or amicability, the bot must embody the institution’s intended personality traits. Routine audits are essential in monitoring compliance with these standards, thereby ensuring uniformity across all communication channels.



Safe: It is of utmost importance that financial institutions implement comprehensive security protocols within their chatbot technology, given that these entities are frequent targets of cyberattacks. Extensive authentication mechanisms must be established to validate users’ identities prior to granting access to account information. Furthermore, the bot should adhere to industry-standard encryption protocols to safeguard customer data transmitted between the user’s device and the banking infrastructure.

Multichannel: To effectively engage customers in

their preferred environments, it is essential to analyse collected insights to ascertain their specific locations. Prominent channels for deployment encompass messaging platforms such as Facebook Messenger, WhatsApp, and Slack, in addition to voice assistants like Amazon Alexa and Google Assistant. Maintaining consistency across all platforms is crucial to ensuring a cohesive user experience and reinforcing the institution's brand identity. A Customer Relationship Management (CRM) system, commonly referred to by its acronym, can assist in consolidating all communication into a singular, centralized repository.

Connected to various departments: Initiate the process by discerning the essential departments with which your chatbot must engage, including but not limited to customer service, account management, loan processing, or fraud detection. Collaborate extensively with the IT department to establish robust Application Programming Interface (API) connections that facilitate the retrieval of pertinent information across all domains. Such integration empowers the chatbot to provide precise responses to inquiries, irrespective of the department in question.

Integrated with Existing Software: Engage in collaborative efforts with IT teams and software vendors to comprehend the compatibility requirements and technical specifications pertinent to your existing systems. By utilizing their recommendations, select integration methodologies that are congruent with your current infrastructure and security protocols. This strategic approach can ensure that the chatbot is capable of extracting data from existing systems and transmitting valuable analytics back to them. It is imperative to factor in scalability to accommodate future software enhancements and expansions.

Gather Analytic Data: The information amassed from chatbot interactions yields significant insights into user preferences, frequently asked questions, and customer pain points, thereby enabling financial institutions to customize their services to more effectively address customer requirements. Through the analysis of these interactions, organizations can more accurately discern trends, thereby equipping them to anticipate user inquiries and proactively mitigate potential challenges. Moreover, this data can be leveraged to evaluate the chatbot's performance, specifically in terms of its efficacy in diminishing support costs, augmenting customer engagement, or driving sales.

Learn from each Interaction: By employing methodologies such as Natural Language Processing (NLP) and sentiment analysis, chatbots can progressively enhance their understanding of user context over time. With each interaction, these bots accumulate valuable insights regarding customer preferences, inquiries, and conversational dynamics, which can subsequently be utilized to refine their algorithms and decision-making frameworks. Reinforcement learning can further facilitate the capacity of chatbots to adapt and enhance their performance in response to customer feedback.



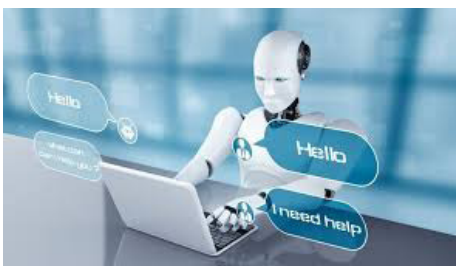
Useful: It is vital to continuously train your bot to adeptly address a variety of user inquiries concerning banking services, policies, and procedures. This may involve equipping the bot with access to an up-to-date knowledge base that includes frequently asked questions (FAQs) and pertinent financial regulations. Additionally, it is advantageous to empower the chatbot with real-time access to account information, thereby promoting personalized responses to more specific user inquiries.

'AI Chatbots' in Travel Destinations: Furthermore, these Chatbots possess the capability to suggest travel destinations and facilitate the Booking of ancillary travel services such as accommodations and vehicle rentals. In instances where a customer poses a question that pertains specifically to their unique travel circumstances and lies beyond the Chatbot's functionality, the system is programmed to transfer the customer to a human representative. An illustrative example of this might include inquiries about around-the-world tickets encompassing numerous routes and stopover options, along with varying baggage allowances contingent upon the country, in conjunction with specific dietary restrictions.

Correspondingly, the chatbot is equipped to perform Sentiment Analysis, thereby discerning when the Customer's Tone has escalated to a State of Agitation. Through these mechanisms, Chatbots enhance Operational Efficiency, Diminish Expenditures, and elevate the Customer Experience.

Chatbots are also capable of being Trained to Identify specific keywords or phrases and to generate responses that are Tailored accordingly. They can leverage Rich Text Capabilities and facilitate the incorporation of Images, Videos, and Interactive Menus. Such functionalities engender a personalized experience for the Customer, which can subsequently enhance Customer Satisfaction and foster loyalty.

'AI Chatbots' in Telecommunications: In a scenario where a Customer of a Telecommunications Company raises concerns regarding diminished internet speeds or subpar call quality, the chatbot can proffer bespoke solutions predicated upon the Customer's Account Information. This may include offering a complimentary upgrade from their existing plan or dispatching a technician to the customer's location within a short timeframe. This individualized approach significantly amplifies Customer Satisfaction. Research indicates that 75% of customers exhibit a greater propensity to purchase from a company that acknowledges them by name, recommends products based on previous purchases, or possesses knowledge of their purchase history.



Chatbots in Airline Companies

An Airline Corporation may implement Artificial Intelligence-powered Chatbots to manage inquiries related to Flights, including but not limited to Flight Status, Baggage Allowances, and Alterations to Reservations.

'AI Chatbots' in Hospital Sector: Chatbots can be seamlessly integrated with a variety of Application Programming Interfaces (APIs) to facilitate the automation of tasks such as Scheduling Appointments in accordance with organizational availability and consumer preferences, processing monetary transactions, and retrieving relevant information. They possess the capability to disseminate reminders and notifications to clients prior to their scheduled appointments, thereby optimizing call center efficiency and mitigating the incidence of missed appointments, alongside reducing customer attrition.

Implementation Tips of Chatbots:

Identify the primary purpose and objectives of the chatbot. In the scenarios delineated above, a medium-sized Banks necessitates a Chatbot dedicated to customer service and sales support. Its primary objective is to enable the scalability of its call center in tandem with business growth. It seeks to minimize call waiting times and enhance the customer experience. Additionally, it aims to alleviate the workload of call center personnel, allowing them to focus on more complex inquiries, increase the resolution rate of customer service calls, and provide round-the-clock support. The investment in the chatbot should also yield reductions in operational expenditures (OPEX) and capital expenditures (CAPEX), thereby enhancing return on investment (ROI). When strategically developed in this manner, chatbots can effectively manage approximately 68.9% of customer inquiries from initiation to resolution.

Create workflows and protocols. Consult with team members to identify which tasks would be straightforward for customers to accomplish via the Chatbot and request a detailed step-by-step guide for each task. Document any deficiencies or areas where enhancements are necessary. Prioritize the issues and tasks that generate the highest volume of inquiries. Develop workflows and protocols that delineate when the chatbot should escalate a case to a human customer service representative or sales agent. Ensure that the chatbot conveys all pertinent details and data from the customer interaction to a human agent and the customer relationship management (CRM) system.



Integration of Chatbots

Through the Integration of Chatbots into their Digital Platforms or messaging Applications, Enterprises such as Private Dental Practices, Medical Clinics, Hair Salons, and Physiotherapy Centers can empower customers to engage in Self-service while efficiently managing appointment scheduling at a considerable Volume and Pace.

Ensure access to essential platform functionalities. When evaluating chatbot features for customer service applications, it is imperative to select an artificial intelligence chatbot endowed with Natural Language Processing (NLP) and machine learning capabilities, enabling it to learn and improve with each interaction. Sentiment analysis capabilities would also prove beneficial. If the business operates on an international

scale, the inclusion of multi-lingual options should be a critical consideration. It is essential to select a chatbot that integrates effectively with CRM and other operational systems.

Instruct the automated conversational agent to proficiently manage complex inquiries that encompass multiple workflows. This may involve the process of item returns alongside the acquisition of refunds. The conversational agent should possess the capability to guide the consumer through the completion of the return documentation and the generation of shipping labels, subsequently inquiring whether the consumer prefers a refund or a credit to their account, and facilitate the necessary procedural steps.

Conclusion: Consider a comprehensive Omnichannel approach. Research indicates that organizations can sustain approximately 89% of their customer base by implementing an omnichannel strategy; thus, it is imperative to select a chatbot that is capable of being deployed across various platforms, such as WhatsApp, Messenger, websites, and applications.

References:

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WEBINARS ORGANIZED BY THE BFSIB

Webinar on "Role of CMAs in Life Reinsurance"

26th June 2025

Webinar on Role of CMAs in Life Reinsurance

Rationale for Reinsurance – Why Reinsurance?

- Insurance Cos with low level of capital transfer of a proportion of mortality/ morbidity risks to reinsurer is prime motivation
- Transfer of risk from insurer's book to reinsurers book (Risk transfer)
- Reduce mortality fluctuations from large claims
- Sub-std risks tend to be reinsured to greater extent than standard risks
- Internationally diversified reinsurers are better equipped to bear the uncertainty about the expected level of insurance claims
- Proportional reinsurance → substantial amount of risk transferred. Non-proportional have impact of extreme claim scenarios like multiple claims related to single catastrophic event or heavy claims across portfolio
- Access to capital to mitigate new business strain
- Knowledge and skill transfer



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CMA P N Murthy, Life Insurance Consultant and BFSI Board Member

T^{he} Banking, Financial Services & Insurance Board (BFSIB) of the Institute of Cost Accountants of India (ICMAI) organized an insightful webinar on the topic "Role of CMAs in Life Reinsurance" on June 26, 2025, from 4:00 p.m. to 5:15 p.m. CMA Dibbendu Roy, Additional Director, Secretary, and HoD of BFSIB, welcomed the distinguished speaker, CMA P N Murthy, a seasoned Life Insurance Consultant and BFSI Board Member. The webinar aimed to create awareness among CMAs about the growing relevance and opportunities in the life reinsurance domain, especially in the evolving regulatory and risk environment. CMA P N Murthy elaborated on the fundamentals of the reinsurance industry, including its business models, historical context, and current trends in India. He highlighted how life reinsurance acts as a critical risk management tool for life insurers by stabilizing earnings, improving capital efficiency, and enabling innovation in product offerings. The discussion included key regulatory

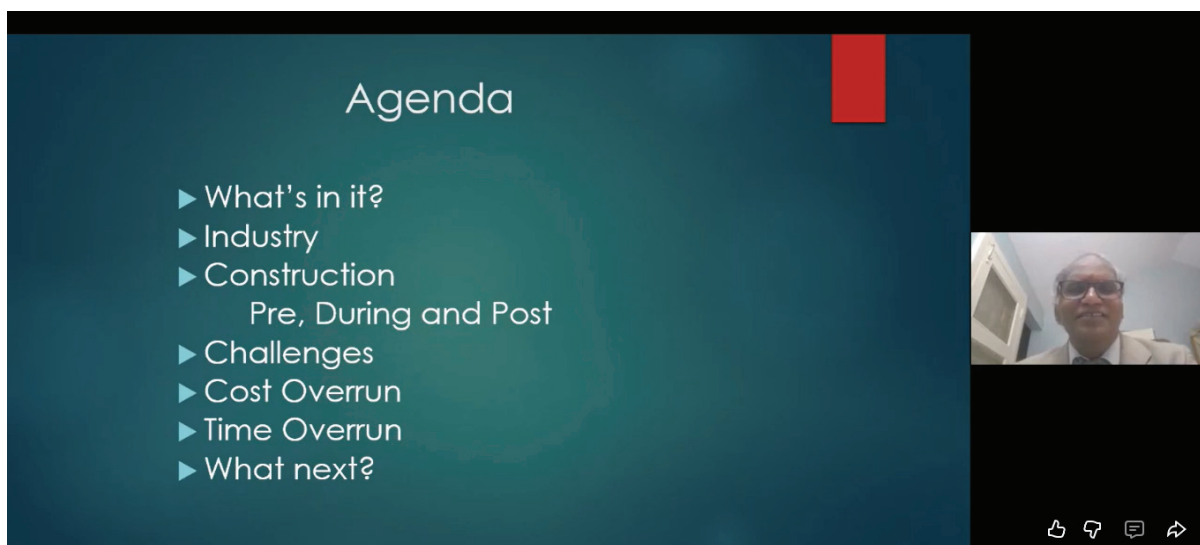
frameworks such as the IRDAI (General Insurance-Reinsurance) Regulations, 2000, and the Insurance Laws (Amendment) Act, 2015, which paved the way for foreign reinsurers and Lloyd's of London to establish branches in India, boosting the country's aspiration to become a global reinsurance hub. The speaker provided a technical deep dive into Treaty vs. Facultative Reinsurance, Proportional vs. Non-Proportional Reinsurance, and the significance of reinsurance strategy alignment with IRDAI's corporate governance guidelines. CMA Murthy stressed the importance of designing robust annual reinsurance programmes that optimize risk retention within India, ensure cost efficiency, and maintain transparency in board-level oversight. A special focus was given to the Indian Market Terrorism Risk Insurance Pool, managed by GIC Re, which exemplifies coordinated risk-sharing after the global withdrawal of terrorism covers post-9/11. He also discussed performance auditing of reinsurance programmes, emphasizing the need for CMAs

to assess management information systems and internal audits for adequacy and effectiveness. Highlighting the strategic and analytical roles of CMAs, CMA Murthy illustrated how CMAs can contribute to reinsurance through Finance and Investment Administration, Financial Underwriting (Risk Assumption), Risk Transfer Mechanism Design, Performance Audit, Strategic Advisory, and Internal Control Strengthening. He noted that CMAs' expertise in financial analytics, cost control, and compliance makes them ideal candidates to lead and advise on reinsurance strategies. CMAs were encouraged to explore areas such as data analytics, risk modelling, and contract negotiation (e.g., better auto treaty terms), to enhance operational efficiency and financial sustainability in insurance companies. The performance audit of reinsurance programmes plays a critical role in evaluating the effectiveness, efficiency, and compliance of an insurance company's reinsurance strategy. Its primary objective is to assess whether the reinsurance arrangements are structured to align with regulatory mandates, particularly the IRDAI's directive to maximize the retention of insurance premiums within the country. This audit examines whether insurers have sufficiently explored domestic reinsurance capacities – such as those offered by GIC Re or other Indian reinsurers – before ceding risks to foreign entities. By doing so, the audit supports the national goal of building internal risk-bearing capacity and reducing dependency on overseas markets. A thorough performance audit reviews the design and implementation of the reinsurance programme, ensuring it is based on a clear, board-approved framework that reflects the company's risk appetite and financial strategy. It evaluates whether the terms negotiated with reinsurers are cost-effective and whether the protection purchased is commensurate with the premium outflows. Key metrics such as the

retention ratio, reinsurance cost ratio, claims recovery efficiency, and reinsurer credit ratings are analysed to determine the financial and operational soundness of the reinsurance arrangements. The audit also scrutinizes the Management Information System (MIS) and internal reporting mechanisms to ensure real-time monitoring of exposures, treaty utilization, and claims recoveries. In addition, the audit assesses the internal audit function's coverage of reinsurance activities, ensuring that any deviations from the planned reinsurance programme are identified and reported promptly to senior management and the board. This supports transparency and strengthens corporate governance. The role of Cost and Management Accountants (CMAs) in such audits is particularly significant. With their expertise in financial analysis, cost control, and risk management, CMAs contribute to evaluating the overall value derived from reinsurance contracts and advising on potential improvements. They help insurers optimize retention strategies, negotiate more favourable treaty terms, and align reinsurance decisions with long-term financial sustainability. Furthermore, he pointed out that while CMAs bring robust financial expertise, there is a need for interdisciplinary knowledge, including certifications like Fellow of the Insurance Institute of India (FIII), to strengthen their capability in reinsurance. CMAs were urged to upgrade their skills in actuarial analysis, data science, and regulatory compliance, aligning with global best practices. The session concluded with a lively Q&A, where practical scenarios, regulatory challenges, and ways to expand CMA roles in the insurance and reinsurance sector were vividly discussed. CMA Dibbendu Roy extended the vote of thanks, appreciating the speaker's valuable insights and reinforcing BFSIB's commitment to enhancing the knowledge base of CMAs in the BFSI domain. ●

Webinar on "Challenges and Successful Outcomes in Infrastructure Projects"

30th June, 2025



CMA (Dr.) Chivukula Vasudev, Freelance Consultant



CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board, ICMAI

The Banking, Financial Services & Insurance Board (BFSIB) of the Institute of Cost Accountants of India (ICMAI) organized a webinar on the topic "Challenges and Successful Outcomes in Infrastructure Project" on June 30, 2025, from 4:00 PM to 5:15 PM. The session was

addressed by CMA Dr. Chivukula Vasudev, a Freelance Consultant, who provided deep insights into the infrastructure industry, discussing its key success factors, industry structure, and the role of both organized and unorganized sectors in contributing to economic prosperity. He emphasized the uniqueness of the sector in terms of cost competitiveness, internal perspectives, and value addition, highlighting elements such as the value chain, efficiency, effectiveness, and the learning curve, including how these are measured. Dr. Vasudev elaborated on project governance and the significant engagement of Cost and Management Accountants (CMAs) in building transparency, accountability, stakeholder integration, and trust. He described CMAs as custodians of trust and professionalism, contributing through tools like cost statements, job cost reports, and activity-based controls. Their role in strategic decision-making, integrating operations with corporate governance, and enhancing business competence and capability was also underlined. The speaker explained how cost elements, operational efficiency, and corporate strategy collectively shape cost competitiveness in infrastructure projects. The session also connected infrastructure development with the United Nations Sustainable Development Goals (SDGs), especially in areas such as water supply, sanitation, hygiene, energy production and distribution, and the broader goal of promoting resilient infrastructure, sustainable industrialization, and innovation. Project management was described as the art of organizing, leading, and completing projects effectively, with key components including planning, scheduling, risk management, and coordination. The scope of project management, according to the speaker, includes quality, environment, health and safety (EHS), cost, time, scope, risk, human resources, and communication. Further, the speaker discussed the components of a Detailed Project Report (DPR), such as demand forecasting, planning and design parameters, structure, maintenance, and engineering aspects. He also addressed major challenges in infrastructure projects like cost overruns – caused by underestimation, scope changes, and delays – as well as time overruns due to resource constraints, unforeseen circumstances, and communication gaps. Mitigation measures

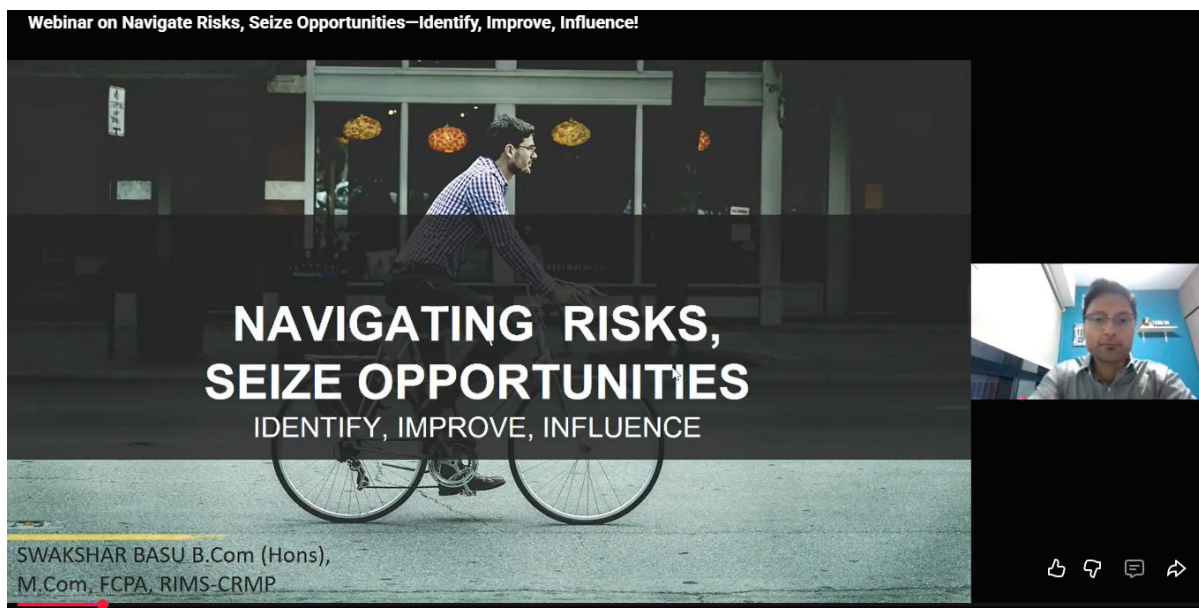
such as rigorous project appraisals, periodic reviews, and setting up coordination committees were suggested. To achieve successful outcomes, Dr. Vasudev recommended strategies including thorough planning, effective communication, risk mitigation, and efficient resource management. He also highlighted the concept of “value capture,” which involves identifying opportunities to generate additional resources. The webinar touched upon significant government initiatives like the Ministry of Ports’, Sagarmala Program, aimed at time-bound infrastructure development. Dr. Vasudev concluded by cautioning against greenwashing – the practice of falsely marketing projects or services as environmentally sustainable when they are not – emphasizing the need for integrity and accountability in infrastructure development.

After the brief question and answer session, CMA Chittaranjan Chattopadhyay, Chairman, BFSIB also addressed the webinar and highlighted several key aspects related to the theme of infrastructure project challenges and successful outcomes. He acknowledged the importance of the topic in the current economic and developmental landscape and emphasized the critical role that Cost and Management Accountants (CMAs) play in ensuring transparency, efficiency and strategic financial management in large-scale infrastructure projects. He appreciated the comprehensive insights shared by CMA Dr. Chivukula Vasudev and reinforced the relevance of project governance, cost competitiveness, and sustainable practices in driving successful project execution. CMA Chattopadhyay extended his heartfelt congratulations to all the participating members and stakeholders for their enthusiastic involvement and active engagement during the session. He expressed his gratitude to the organizers, the speaker, and attendees for making the webinar a meaningful and impactful discussion. In his concluding remarks, he delivered the formal vote of thanks, acknowledging the efforts of the BFSIB of ICAI in organizing such a timely and insightful event, and encouraged continued collaboration and knowledge sharing among professionals to address the evolving challenges in the infrastructure sector.



Webinar on "Navigate Risks, Seize Opportunities— Identify, Improve, Influence!"

4th July 2025



Shri Swakshar Basu, FCPA and RIMS-CRMP, Associate Vice President at Revantage Asia Pacific, A Blackstone Company



CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board, ICAI

The Banking, Financial Services & Insurance Board (BFSIB) of the Institute of Cost Accountants of India (ICMAI) organized a webinar on the theme “Navigate Risks, Seize Opportunities – Identify, Improve, Influence” on July 4, 2025, from 3:00 PM to 5:00 PM. The session aimed to provide insights into strengthening risk management practices within organizations by aligning the organizational model with a strategic risk approach. Key topics included establishing a clear risk appetite and tolerance framework, securing leadership support, building a strong risk culture and governance structure, and developing a gradual implementation plan and roadmap across contextual risk categories. Shri Swakshar Basu, Associate Vice President at Revantage Asia Pacific, a Blackstone Company, the eminent speaker emphasized the importance of risk-based decisions and fostering risk dialogue by understanding the risk attitude of key decision-makers and influencers. The webinar highlighted the core stages of the risk management process, including Risk Identification, Risk Analysis, Risk Treatment, Risk Monitoring, and Risk Reporting. Bow Tie Analysis was introduced as a tool to represent risk events with multiple causes and consequences, enabling better visualization of complex risk scenarios. The session also addressed the importance of proactive risk management by anticipating the velocity and impact of risks, particularly in areas like cybersecurity. To protect an organization’s critical infrastructure from cyber threats, the speaker recommended implementing strong internal controls, developing a robust risk response strategy, and recognizing the role of Level 1 risk categories such as strategic, financial, operational, compliance, and technology. An effective implementation roadmap for establishing risk categories and defining risk appetite can be structured into distinct phases to ensure a strategic and manageable rollout. The first phase involves initial planning and stakeholder engagement, where leadership aligns on the importance of risk management, sets objectives, and identifies key stakeholders, including board members, risk owners, and department heads. During this phase, a governance structure is established to oversee the development and implementation of the framework. The second phase focuses on risk identification and

categorization. This involves conducting workshops, interviews, and reviews of historical data to determine the key risk categories relevant to the organization – such as strategic, operational, financial, compliance, reputational, and emerging risks. Each risk category is clearly defined with examples to ensure consistent understanding across the organization. The third phase centres on risk appetite development. Senior leadership, in collaboration with risk managers, defines the organization’s tolerance levels for each risk category. This includes both qualitative statements and quantitative thresholds (e.g., financial loss limits, performance indicators) that reflect the organization’s strategic goals and capacity for risk. Stakeholder input is crucial here to ensure alignment between risk appetite and business objectives. In the fourth phase, the focus shifts to integration and communication. Risk categories and appetite statements are embedded into existing risk management processes, including risk assessments, decision-making protocols, and reporting structures. A strong emphasis is placed on communication and training to ensure that staff at all levels understand how to apply the risk framework in their day-to-day activities. The final phase involves monitoring, review, and continuous improvement. The effectiveness of the risk categories and appetite statements is regularly evaluated through audits, incident reviews, and performance monitoring. Feedback loops are established to refine definitions and thresholds as the organization’s environment evolves, ensuring the risk framework remains relevant and effective over time. This phased approach ensures a structured, transparent, and adaptive implementation of risk categories and appetite aligned with organizational resilience and strategic priorities. Shri Basu also emphasized the implementation plan for managing the scope of risk begins by clearly defining the objectives of risk management within the context of the project or organization. This includes identifying potential risks that could impact strategic, operational, financial, compliance, and reputational areas. The first step involves risk identification, where all relevant internal and external threats are captured through methods such as workshops, interviews, document reviews, and brainstorming sessions. Once identified, risks are assessed based on their likelihood and potential impact, typically using a risk

matrix to categorize them as low, medium, or high. This evaluation helps prioritize the most critical risks and ensures alignment with the organization's risk appetite and tolerance. He also asserted the effective risk management that involves a comprehensive and proactive approach and encompasses several key activities. It begins with identifying, assessing, and prioritizing risks based on their potential impact and likelihood. Once risks are identified, appropriate risk responses are developed and implemented to mitigate, transfer, accept, or avoid them. Continuous monitoring of both internal and external environments is essential to detect any changes that may affect the risk landscape, allowing organizations to adapt their strategies accordingly. Measuring risks against established risk limits ensures that exposures remain within acceptable thresholds. A clear risk taxonomy is used to categorize and organize risks systematically, enhancing understanding and communication. Regular risk reporting is developed to keep stakeholders informed and ensure transparency. Follow-up activities, including reassessments and audits, are conducted to verify that risk responses are effective. To strengthen the overall risk management process, organizations should invest in ongoing training and awareness initiatives. These efforts collectively contribute to the continuous improvement of the risk management framework, ensuring it remains robust and responsive in a dynamic environment. Roles and responsibilities are clearly defined, with the project manager or risk officer overseeing the

overall process, and team members contributing to risk identification and escalation. Supporting tools such as risk management software and project tracking systems are employed to enhance efficiency and accuracy. The implementation follows a phased timeline—from planning and identification to treatment and continuous monitoring. Success is measured by the extent to which risks are proactively identified and controlled, and by the organization's resilience in responding to uncertainties. Continuous improvement is encouraged through periodic reviews, lessons learned sessions, and updates to the risk framework, ensuring the risk management process remains robust, relevant, and effective over time.

Participants were engaged through poll questions to assess their understanding of identifying risks, managing them effectively, and adopting proactive measures. The speaker also shared insights into Enterprise Risk Management (ERM) tools such as Risk and Control Self-Assessment (RCSA) and Event Data Collection, which are critical for ongoing assessment and improvement. CMA Partha Choudhuri, Advisor to the BFSI Board, gave the welcome address, while CMA Chittaranjan Chattopadhyay, Chairman of the BFSIB, delivered the concluding note. He also praised the speaker's vision on the "3 Is"—Identify, Improve, and Influence and encouraged him to share further insights in future webinars. The session concluded with a vote of thanks delivered by Shri Rahul Arya, Joint Director, ICAI.

Webinar on "Role of CMAs in Banking Sector"

17th July, 2025



CMA Uday Sankar Majumder, Chief Risk Officer & CGM, Canara Bank

The Banking, Financial Services & Insurance Board (BFSIB) of the Institute of Cost Accountants of India (ICMAI) organized the first Banking Month Webinar on July 17, 2025, on the topic "Role of CMAs in the Banking Sector" with CMA Uday Sankar Majumder, Chief Risk Officer and Chief General Manager of Canara Bank, as the chief guest and distinguished speaker. During the session, CMA Majumder emphasized the significant contributions that Cost and Management Accountants (CMAs) can make in various critical functions within the banking sector. He highlighted that CMAs can provide better services in the Agency for Specialized Monitoring (ASM) through effective monitoring and reporting mechanisms. Banks heavily rely on professionals to ensure the delivery of quality services, particularly in areas like stock audits, which are conducted routinely and are critical to the financial health and risk assessment of borrowers. Cost Accountants can play a significant role by focusing on the preparation of due diligence reports, which help banks make informed lending decisions. These reports must incorporate early warning signals wherever applicable, highlighting any potential risks clearly and without ambiguity.

A variety of resources, such as Bloomberg Blast, Pro 42, and Reuters, serve as valuable feeders of financial and market intelligence, aiding in the preparation of comprehensive reports. Additionally, due diligence can be enhanced by accessing information from connected websites and databases, ensuring a well-rounded assessment. The integration of Artificial Intelligence (AI) can further support this effort by identifying hidden issues and anomalies. Professionals are also actively contributing to Expected Credit Loss (ECL) assessments, and the implementation of IFRS (International Financial Reporting Standards) presents a significant opportunity within the banking sector, especially as it has already been adopted by many NBFCs. This evolving landscape provides ample scope for professionals from various domains to contribute meaningfully to the financial system. He noted that Stock Audit Reports play a crucial role for banks in assessing inventory and ensuring proper asset valuation. Similarly, Due Diligence Reports are key documents where banks rely heavily on professionals for accurate financial analysis and risk assessment. The process of collecting data from various bills and gathering credit score information was identified as

another important area where CMAs can add value by ensuring accuracy and comprehensiveness. CMA Majumder stressed the importance of having proper documentation in place to avoid legal issues and ensure compliance with regulatory standards. He also underlined the growing need for the application of Artificial Intelligence (AI) in banking operations, where CMAs can contribute by integrating technology with financial analysis. Furthermore, he mentioned that many CMAs are already involved in Expected Credit Loss (ECL) calculation, a critical aspect of financial reporting under current accounting standards. To remain effective in this evolving landscape, CMA professionals must adopt a computerized and system-based approach, ensuring consistency, reliability, and adaptability in their work. Speaker emphasized that the Institute can play a vital role in guiding professionals to develop robust costing models for banking products. Key areas such as loan closure procedures, document attestation, and activity-based costing (ABC) for various banking services are becoming increasingly important, especially as the Reserve Bank of India (RBI) pushes for greater fairness and transparency in the financial sector. With RBI's growing insistence on unbiased and consistent practices, system-based audits are gaining prominence. In this context, professionals have a significant opportunity to contribute by enhancing basic systems and implementing updated ideas within the banking framework. Furthermore, the RBI is gradually encouraging the adoption of the Five Lines of Defence framework, which is designed to safeguard financial institutions from risk and operational failures. The first line involves business units managing their own risks. The second line focuses on establishing a solid policy framework that covers risk management and compliance, including accurate asset valuation. The third line is internal audit, responsible for identifying and addressing control breaches. The fourth line consists of external auditors who provide an independent evaluation, while the fifth and final line is the RBI itself, through its regulatory inspections. This framework reflects the RBI's increasing emphasis on strengthening the assurance function across the banking ecosystem. As a result, professionals with expertise in costing, compliance, and auditing are well-positioned to support the sector's evolving requirements, helping

to ensure robust, fair, and accountable financial practices. He vividly discussed on Compliance Testing, the Risk Management department, and the Internal Audit department are all key assurance functions that provide confidence that the company's operations are being conducted in line with regulatory requirements, internal policies, and ethical standards. These functions play a crucial role in identifying and addressing potential breaches, ensuring that risks are effectively managed and internal controls are functioning as intended. By relying on these assurance functions, the organization can maintain integrity, accountability, and transparency. This also allows professionals within the company to focus more effectively on their core responsibilities, knowing that there are dedicated teams in place to monitor, assess, and provide assurance on the overall health and governance of the business. The speaker highlighted the evolving risks faced by banks, including credit risk, marketing risk, liability risk due to depositors shifting to mutual funds regulated by SEBI, and the growing outsourcing risk, which has emerged as a major concern. While extending loans has become easier, managing liability mobility remains a challenge for banks. The webinar emphasized the importance of adhering to government standards and the critical role of CMAs in the sector. Since IT professionals may not always possess deep functional expertise, CMAs, with their knowledge of costing and financial management, can provide valuable guidance in coding, compliance, and operational decision-making. The role of cost accountants was recognized as highly relevant where functional expertise is essential, particularly in areas such as Expected Credit Loss (ECL) and Risk Management. It was further stressed that professionals must collaborate with consultants, fintech firms, and other organizations to enhance quality and efficiency. With CMAs already empanelled in many organizations, there are immense opportunities for them in the banking sector, where their skills can bridge the gap between financial expertise and technological execution. During the webinar, the 5th Annual Issue and 21st Edition of the BFSI Chronicle (July 2025) was also released. The webinar concluded with an interactive question and answer session and vote of thanks was given by CMA Dibbendu Roy, HoD and Secretary, BFSI Board, ICAI.

Webinar on “Role of CMAs in Credit appraisal of Banks”

19th July 2025



CMA Gopal Singh Gusain, Non-Executive Chairman, Nainital Bank



**CMA Chittaranjan Chattopadhyay,
Chairman, BFSI Board, ICAI**

(Bank Nationalization Day). The session aimed to update members on emerging avenues in credit appraisal and outline the procedural requirements for empanelment.

The session was graced by CMA Gopal Singh Gosain – Chief Guest & Keynote Speaker, Non-Executive Chairman of Nainital Bank and Former Executive Director of Union Bank of India. He shared deep insights into the nuances of credit appraisal, the pillars supporting it, and its critical role in ensuring banking stability and profitability.

The webinar commenced with a warm welcome address by CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board, who expressed gratitude to the main speaker and to CMA Partha Choudhuri, Advisor, BFSI Board, for joining on the auspicious occasion of the 56th Bank Nationalization

Day.

In his address, CMA Chittaranjan Chattopadhyay congratulated participants on the 56th Bank Nationalization Day, emphasizing the pivotal role of CMAs in credit appraisal within the BFSI sector.

The BFSI Board of the Institute convened an insightful webinar on “Role of CMAs in Credit Appraisal of Banks” on 19 July 2025

He highlighted the BFSI Board's key publications, including the 3rd Edition of Infrastructure Financing and the Annual Banking Chronicle, underscoring their value in advancing industry knowledge. Additionally, he introduced the Chief Guest as a versatile expert capable of addressing critical industry questions, setting the stage for an insightful discussion on contemporary financial challenges.

CMA Partha Choudhuri, Advisor, BFSI Board, elaborated on these points-

Positioned credit appraisal as vital since the credit portfolio is the primary revenue source for banks; delinquencies can severely impact profitability. Appreciated advances in technology such as the Unified Lending Interface (ULI) and digitised data (land records, satellite data, cooperative and federation data) that support more informed lending decisions. Referred to RBI's digital lending framework as an enabler for strengthening credit appraisal and ensuring prompt credit delivery.

CMA Gopal Gosain has provided a detailed insightful speech highlighting the following: -

The prudent lending is central core to banking – poor appraisal fuels NPAs (RBI: ≥90 days overdue), eroding revenue, capital and system stability; India's gross NPA ratio improved from 9.11% (2021) to 2.58% (Mar 2025). He framed appraisal as identifying credit-worthy borrowers with a balanced risk-return, assessing capacity to pay first, then intention, and focusing on cash-flow as primary repayment source supported by promoter backing/collateral, appropriate covenants/escrow, fair pricing and reputation considerations. Robust appraisal combines financial analysis (BS/P&L, 3–5 year trends, benchmarks, audit-note quality) with non-financial checks (governance, promoter track record, industry outlook), and must be implemented through bank-specific models, credit-risk inputs,

post-sanction monitoring and early-warning signals per RBI guidance.

CMA's add significant value through specialized costing, break-even and capacity analyses, variance reviews, and on-site validations of work-in-progress (WIP), margins, and detailed project reports (DPRs) – which demand industry-specific assumptions on land, machinery, gestation, and break-even – especially where banks lack in-house expertise. In project finance, DPRs rely on external CMA's for accurate costing to mitigate frauds often tied to inflated valuations, which should be cash-flow or incurred-cost based, while credit bureau errors can be rectified via RBI/CIC redressal; macroeconomic risks from geopolitical shocks necessitate stress testing for portfolio impacts, shifting from post-NPA provisioning to earlier expected credit loss (ECL) under IND AS 109.

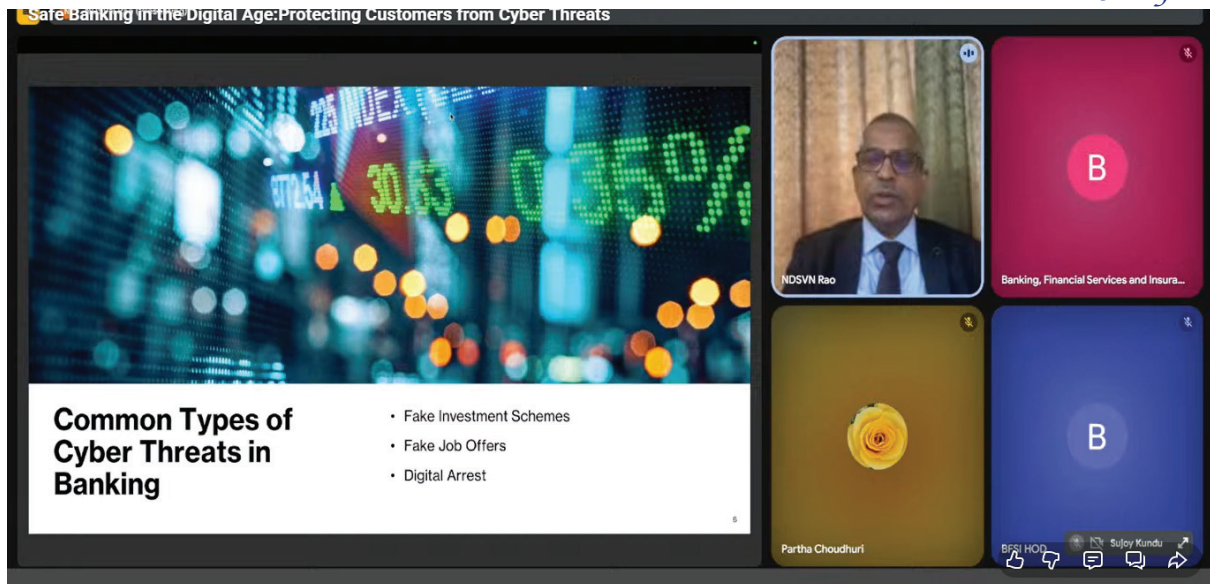
CMA's provide vital costing, forensic-accounting and project-appraisal expertise – including break-even and capacity analysis, audit-note scrutiny, DPR validation, cash-flow-centric modelling and covenant design – that enables banks to assess borrower creditworthiness more accurately, detect early-warning signals, and structure recoverable lending; this materially reduces NPAs, lowers provisioning, preserves interest income and improves recovery rates, making CMA's indispensable to credit decision-making and revenue protection.

The webinar concluded with an engaging Q&A session, where CMA Gopal Gosain sir addressed participants' queries with depth, clarity, and practical examples.

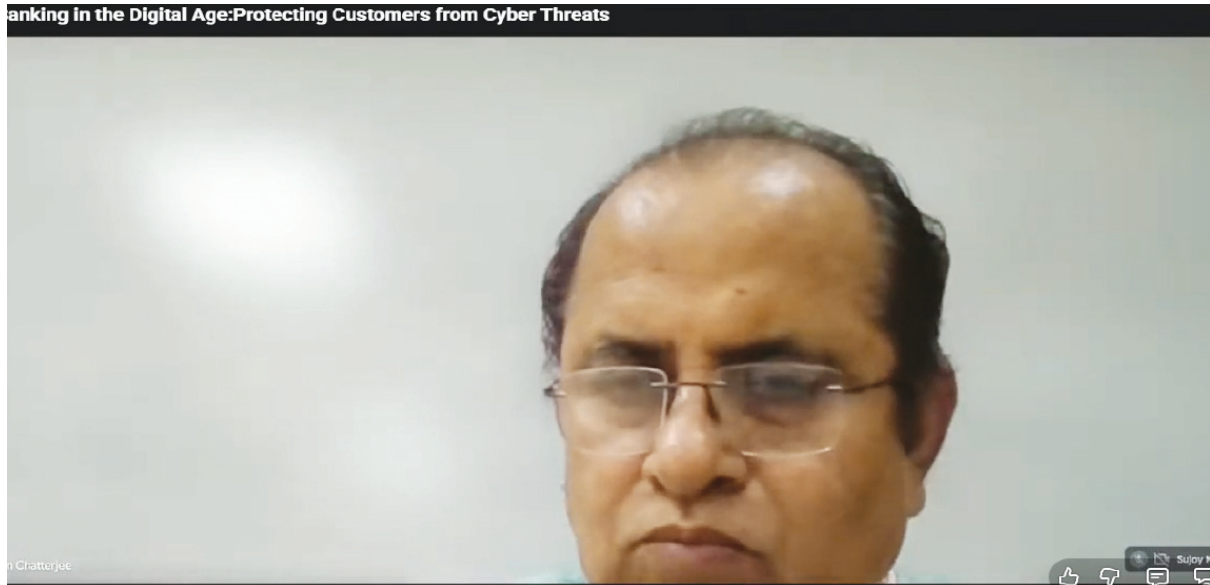
The event closed with formal Vote of Thanks by CMA Dibbendu Roy, Additional Director & Head, BFSI Dept, who appreciates the speaker, dignitaries, and participants for contributing to the session's success.

Webinar on “Safe Banking in the Digital Age: Protecting Customers from Cyber Threats”

20th July 2025



Shri NDSV Nageswara Rao, Chief General Manager (OPR), State Bank of India (SBI)



CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board, ICMAI

The webinar titled “Safe Banking in the Digital Age: Protecting Customers from Cyber Fraud and Cyber Threats” was organized as part of the BFSI Board’s July 2025 Banking Month.

The session focused on increasing awareness about the risks and protective measures related to digital banking, especially given the rapid growth of digital financial transactions in India. The keynote speaker,



Sri NDSB Nageshwara Rao, Chief General Manager OPR at the State Bank of India (SBI), shared his extensive expertise on the topic.

The programme was hosted by Indrakshi Bhattacharya and chaired by CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board, and graced by distinguished Chief speaker Sri NDSB Nageshwara Rao, Chief General Manager OPR at the State Bank of India (SBI), & CMA Partha Choudhuri, Advisor, BFSI Board and CMA Dibbendu Roy, Additional Director & Head, BFSI Board

CMA Partha Choudhuri, Advisor, BFSI Board welcomes chief guest, all dignitaries and member participants and highlighted that in a vast country like India, universal access to banking increasingly means access through digital platforms. With this progress, however, comes heightened exposure to cyber threats. He noted that addressing these risks is a shared concern for government, regulators, law enforcement, and customers, who often become innocent victims.

CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board opened the session by stressing that while digitalisation has transformed banking with speed and convenience, it has also increased cyber risks. He highlighted the Institute's role in capacity building and underlined how CMAs, through their expertise in risk assessment and governance, can strengthen processes and safeguard both customers and institutions.

Honourable Chief Guest speech – Sri N. D. S. P. Nageswara Rao, CGM (OPR), State Bank of India

Sri Nageswara Rao, Chief General Manager (OPR), State Bank of India, delivered a highly practical and operation-focused address on cyber threats in modern banking and measures to safeguard customers. He

outlined the digital transformation of banking – from core banking solutions to mobile applications and UPI – noting that while this shift has enhanced accessibility and convenience, it has also led to a surge in cyber frauds, as highlighted by IC4 data.

He categorised key fraud vectors such as phishing, hacking, man-in-the-middle attacks, ATM skimming, mule accounts, fake investment/job scams, and the emerging menace of “digital arrest” scams, emphasising the need for robust vigilance. Sri Rao detailed the preventive mechanisms adopted by banks, including advanced analytics, multi-factor authentication, transaction alerts, and CSP audits, while underscoring simple but critical customer practices like not sharing OTPs or PINs, using trusted applications, and avoiding public Wi-Fi for transactions.

The speakers highlighted that CMAs play a vital role in safe digital banking by strengthening digital KYC, embedding operational controls, applying fraud analytics, supporting AML compliance, and driving customer awareness, positioning them as trusted partners in protecting customers and reinforcing systemic trust.

The session concluded with a Q&A discussion on interoperable banking and RBI's limited-liability framework, reinforcing the shared responsibility of banks and customers in ensuring safe digital banking.

The event concluded with a formal Vote of Thanks delivered by CMA Dibbendu Roy, Additional Director & Head, BFSI Dept. who acknowledged the contributions of the speakers and participants. He reaffirming the BFSI Board's commitment to building professional capacity in the key areas of new age banking and safety measures among the consumers.

Webinar on “Application of Big Data Analytics and Cloud Computing in Fintech Industry”

31st July 2025



CMA Sutapa Ray, SAP certified Senior FICO Consultant



CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board, ICAI

The BFSI Board of the Institute organised a webinar on “Application of Big Data Analytics and Cloud Computing in the FinTech Industry” on 31st July 2025. The session aimed to explore how cutting-edge digital technologies are reshaping financial services, improving operational efficiency, and opening new avenues for CMAs in the FinTech ecosystem.

The programme was hosted by Indrakshi Bhattacharya and chaired by CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board, and graced by distinguished speaker CMA Sutapa Ray Senior IT Consultant & Finance Professional experts from the FinTech domain & CMA Partha Choudhuri, Advisor, BFSI Board.

CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board welcomed dignitaries, speakers, and participants, emphasising the BFSI Board’s focus on technology-driven topics. He highlighted Big Data Analytics and Cloud Computing as key enablers of transformation in the financial sector.

CMA Partha Choudhuri, Advisor, BFSI Board, elaborated, noting that Big Data Analytics enhances

credit analysis, fraud detection, and customer insights, while cloud adoption improves scalability, security, and cost-effectiveness in fintech. He urged CMAs to adopt digital tools to boost relevance and stressed that technology drives governance, transparency, and efficiency in BFSI institutions.

Expert Session – CMA Sutapa Ray (Senior IT Consultant & Finance Professional)

Delivered an in-depth presentation on the practical applications of cloud platforms and data analytics in BFSI.

Illustrated how SAP and ERP solutions are leveraging cloud to enhance financial processes, compliance, and reporting.

Emphasized real-time data processing as a key enabler of strategic financial decision-making.

Encouraged finance professionals to upskill in data management, analytics, and ERP tools to stay future-ready.

Key Insights – Expert Addressal

Fintech models (B2B, B2C, P2P) are reshaping



financial services – CMAs must understand their dynamics.

Big Data Analytics (descriptive → prescriptive) empowers sharper decisions, risk control, and growth in BFSI.

AI/ML & Deep Learning are transforming fraud detection, credit scoring, and customer engagement with measurable gains.

Cloud Computing offers cost-effective, scalable, and secure infrastructure – vital for modern fintech.

Data-driven strategies can raise revenue (15–20% per McKinsey) and improve loan recovery accuracy (92%+).

Challenges remain – computational demands and

data quality – but opportunities outweigh risks for finance professionals.

The Q&A session was highly engaging, with participants raising practical queries on the applications of big data and cloud in fraud detection, credit scoring, and process optimization. CMA Sutopa Roy addressed them with clarity, offering real-world examples and actionable insights for finance professionals.

The event concluded with a Vote of Thanks by Indrakshi Bhattacharya who acknowledged the contributions of the speakers and participants. He reiterated the BFSI Board's commitment to equipping CMAs with insights into the latest technological developments shaping the financial sector.



Webinar on “Infrastructure Project Financing”

8th August 2025



Shri C. M. Khurana, Former CGM-CFO, Oriental Bank of Commerce, Former CGM (Credit) IIFCL



CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board, ICMAI

The BFSI Board of the Institute organised a webinar on “Infrastructure Project Financing” to update members on emerging opportunities, challenges, and best practices in this critical sector. The session highlighted the growing importance of infrastructure as a driver of economic growth and the financing complexities associated with long-gestation projects.

The programme was hosted by Indrakshi Bhattacharya and chaired by CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board, and keynote speaker was Shri CM Khurana (Former CGM-CFO, Oriental Bank of Commerce, former CGM (Credit) IIFCL), & CMA Partha Choudhuri, Advisor, BFSI Board.

CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board, opened the session by welcoming all dignitaries and speakers and participants. He highlighted that infrastructure, contributing nearly 30% to gross capital formation, is central to India's growth agenda under the NIP and Gati Shakti plans. He stressed that CMAs, with their expertise in cost audit, financial evaluation, and governance, are vital in ensuring transparency, efficiency, and

sustainability in project financing.

CMA Partha Choudhuri, Advisor, BFSI Board highlighted the challenges of financing large infrastructure projects, noting the need for innovative funding mechanisms, blended finance, and collaboration between government, banks, and private investors. He pointed to the rising role of digital tools, data analytics, and compliance frameworks in evaluating project feasibility and ensuring transparency in fund utilisation.

Honourable Chief Expert speech – Shri CM Khurana (Former CGM-CFO, Oriental Bank of Commerce, former CGM (Credit) IIFCL)

Shri C. M. Khurana explained that project finance is a specialised long-term funding mechanism where repayment depends on the project's own cash flows, typically structured through a Special Purpose Vehicle (SPV) to isolate risks. He noted the evolving definition of infrastructure in India, which now includes battery storage, data centres, shipping, and tourism, reflecting new priorities.

He outlined the project life cycle – conceptualisation,



construction, and operation, along with sector-specific bidding models (roads, power, ports and airports). Emphasising risk management, he highlighted tools like performance guarantees and Debt Service Reserve Accounts (DSRA), along with RBI's guidelines on consortium lending, phased disbursement, and mandatory clearances before fund release.

He underlined the importance of financial viability metrics – DSCR, IRR, NPV, and payback periods – in evaluating projects from both lenders' and promoters' perspectives. Case studies on the Hybrid Annuity Model (HAM) in road projects and renewable energy financing in solar projects illustrated practical applications. He also addressed queries on FDI in SPVs, asset ownership post-project, and the rising

role of green bonds in sustainable financing.

The speaker concluded that CMAs have a critical role in validating project costs, auditing performance, monitoring risks, and structuring finance, thereby ensuring transparency, investor confidence, and long-term sustainability in infrastructure financing.

The session was marked by high level of participant engagement and concluded with Q&A session where Sri Khurana addressed queries with practical insights and case based response.

The event concluded with a formal Vote of Thanks delivered by Indrakshi Bhattacharya who acknowledged the contributions of the speakers and participants.



Webinar on “Financial Wellness in the age of Instant Money” 28th August 2025



CMA Mohit Nagdev, Certified Financial Planner



**CMA Chittaranjan Chattopadhyay, Chairman,
BFSI Board, ICMAI**

The BFSI Board of the Institute organised a webinar on “Financial Wellness in the age of Instant Money” on 28th August 2025. The webinar emphasis to equip members with practical, discipline-based financial planning techniques for an era of instant payments (UPI, wallets, BNPL) and to highlight digital security, mindful credit use, and portfolio construction for long-term financial wellness.

The programme was hosted by Indrakshi Bhattacharya and chaired by CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board, and graced by distinguished Chief speaker CMA CFP Mohit Nag (Certified Financial Planner; manages significant AUM) & CMA Dibbendu Roy, Additional Director & Head, BFSI Dept.

CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board welcomed participants and framed financial wellness as a strategic priority in the era of instant payments, urging professionals to prioritise disciplined planning over impulsive finance. He highlighted the Institute’s role in upskilling members and called on CMAs to adopt data-driven tools to advice clients effectively. He emphasised that CMAs’ expertise in governance, risk assessment

and structured financial planning is vital to protect long-term client wealth and strengthen systemic resilience.

Expert Session – CMA CFP Mohit Nag (Certified Financial Planner; manages significant AUM)

CMA Mohit Nag delivered a practical, discipline-focused primer on personal financial wellness in an era of instant payments, BNPL and app-based investing. He stressed budgeting discipline (50–30–20), the power of early compounding, disciplined asset allocation driven by risk profiling, the primacy of long-term investing over market timing, and the centrality of insurance and emergency funds. He warned about impulse spending, digital fraud, unsuitable insurance products (ULIPs/traditional plans vs pure term plans) and the need for regular portfolio monitoring and scientific asset-mixing to achieve risk-adjusted goals.

Key Insights – Expert Addressal

Financial wellness: Manage money smartly – today that includes knowing digital credit risks and guarding against cyber fraud, so basic financial literacy is essential.

Start early: Investing in your 20s uses compounding



to grow your retirement pot far more quickly than starting in your 30s.

Avoid impulse trades: Don't follow social-media hype or emotions; do research and stick to a clear plan.

Asset allocation matters most: Spread investments across asset classes based on your risk tolerance – this drives returns more than picking stocks or timing the market.

Active vs passive: In India recently, some active funds (especially in niche/emerging areas) have beaten passive funds – consider active funds for alpha where appropriate.

Insurance first: Buy term insurance for affordable protection; size cover using real liabilities and inflation, not just income multiples.

Stay disciplined: Align investments to your risk

profile and goals, rebalance periodically, and ignore short-term market noise.

The session ended with a Q&A addressing market volatility strategies, bond purchases via online platforms, insurance types, and the role of CMA qualification in financial advisory services. The speaker encouraged investors to remain disciplined, aligned with their risk profiles, and focused on long-term goals rather than reacting impulsively to market swings.

The event concluded with a formal Vote of Thanks delivered by CMA Dibbendu Roy, Additional Director & Head, BFSI Dept. who acknowledged the contributions of the speakers and participants. He reaffirming the BFSI Board's commitment to building professional capacity in the key areas of Investments & Capital market strategies. ●

Webinar on “Innovations and Market Dynamics Driving the \$ 5 Trillion Capital Market Evolution”

6th September 2025



Dr. Pradiptarathi Panda, Asst. Professor, Finance & Accounts, Indian Institute of Management Raipur.



CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board, ICAI

The BFSI Board of the Institute convened an insightful webinar on “Innovations and Market Dynamics Driving the \$ 5 Trillion Capital Market Evolution” on 6 September 2025. The session aimed to explore the transformative forces shaping India’s capital market landscape and examine the strategic pathways toward achieving the ambitious five trillion dollar economic milestone.

The session was graced by Dr. Pradiptarathi Panda, Assistant Professor, IIM Raipur – Chief Guest and Keynote Speaker. He shared comprehensive insights into the innovative mechanisms driving capital market growth, the evolving market dynamics influencing investor behaviour, and the regulatory frameworks supporting sustainable market expansion in the Indian financial ecosystem.

The webinar commenced with a warm welcome address by CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board, who expressed gratitude to the main speaker and to CMA Partha Choudhuri, Advisor, BFSI Board, for their valuable presence at this significant professional development initiative.

The webinar focused on the rapid evolution of

India’s capital markets, exploring how innovation, regulatory reform, and technology are shaping its journey toward a \$5 trillion valuation. Dr. Pradiptarathi Panda provided an analytical overview of how digitalization, fintech integration, blockchain, AI-driven analytics, and big data are redefining efficiency, transparency, and risk management within the capital market ecosystem.

Dr. Panda highlighted that India’s capital market, having rebounded strongly from the COVID-19 lows, has achieved record milestones – the Sensex crossing 86,000 and the market capitalization surpassing USD 5 trillion, placing India among the world’s fastest-growing financial markets. This momentum, he noted, reflects a strong mix of domestic savings, foreign inflows, and a surge in retail investor participation facilitated by mobile trading platforms and financial inclusion drives.

The session examined multiple dimensions of market innovation – from the expansion of derivatives and ETFs to the introduction of social stock exchanges and sustainable finance instruments like green, yellow, blue, and ESG-linked bonds. Dr. Panda emphasized how these instruments align capital market growth



with national sustainability goals, bridging profit with purpose.

On the regulatory front, the discussion covered SEBI's reforms – interoperability of clearing corporations, margin trading rationalization, and the progressive shift from T+2 to T+1 settlement, with pilot exploration of T+0 and one-hour settlements. These initiatives, coupled with risk-based supervision and enhanced disclosure norms, are positioning India's capital markets at par with global best practices.

He also analysed the growing global integration through GIFT City, cross-border listings, and international stock exchanges, which collectively strengthen India's linkages with global capital flows. The derivatives market, now the world's largest by trading volume, was discussed in depth, highlighting both its scale and the risks faced by retail investors – underscoring the need for continued financial literacy

and investor protection.

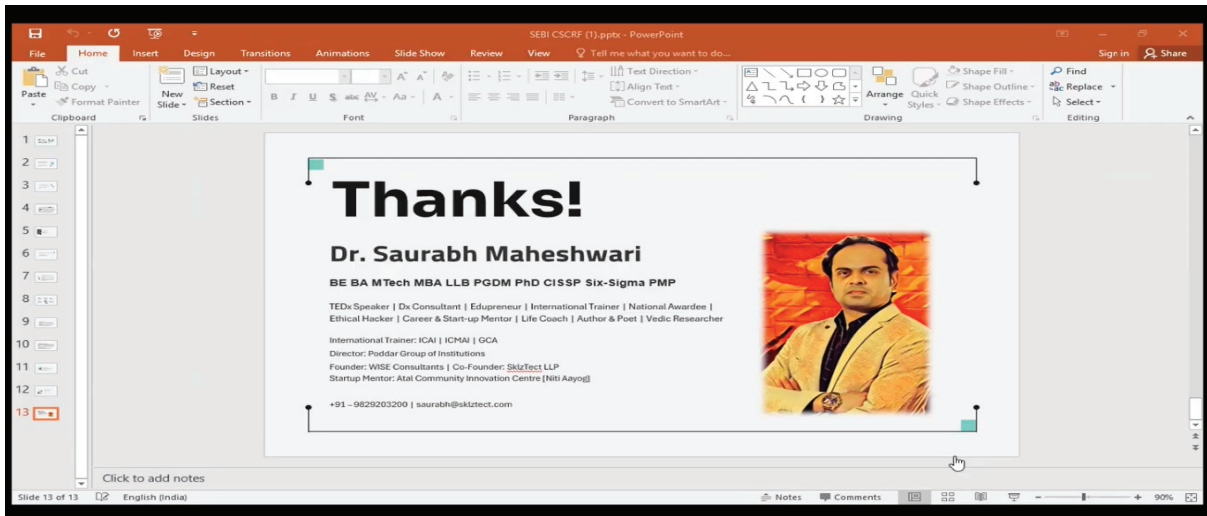
Dr. Panda underlined the critical role of Cost and Management Accountants (CMAs) in this transformation – providing valuation, governance, compliance, and risk management expertise essential to market stability and investor confidence. Their analytical insight and fiduciary responsibility, he noted, make CMAs indispensable partners in the evolving capital market ecosystem.

The webinar concluded with an engaging Q&A session addressing cyber security, investor education, and regulatory agility. The key takeaway was that India's capital markets are advancing toward global leadership through innovation, inclusivity, and institutional governance, where professionals like CMAs play a pivotal role in sustaining transparency and long-term value creation.



Webinar on “SEBI’s Cyber Security and Cyber Resilience Framework (CSCRF)”

11th September 2025



Dr. Saurabh Maheshwari, Consultant



CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board, ICAI

The BFSI Board of the Institute convened a comprehensive webinar on “SEBI’s Cyber Security and Cyber Resilience Framework (CSCRF)” on 11 September 2025. The session aimed to apprise members of the regulatory expectations concerning cyber security protocols and enhance

understanding of the resilience mechanisms mandated for market intermediaries and regulated entities.

The session was graced by Dr. Saurabh Maheshwari (BE BA MTech MBA LLB PGDM PhD CISSP Six Sigma PMP) – Keynote Speaker, who shared

extensive insights into the framework's structural components, the compliance obligations imposed upon financial market participants, and the strategic imperatives for building robust cyber resilience capabilities in an increasingly digitalised securities market environment.

The webinar commenced with a warm welcome address by CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board, who expressed gratitude to the distinguished speaker for illuminating this critical dimension of regulatory compliance and to CMA Partha Choudhuri, Advisor, BFSI Board, for their continued guidance in organising professionally enriching initiatives for the membership.

The webinar focused on SEBI's Cyber Security and Cyber Resilience Framework (CSCRF) – a pivotal step in safeguarding India's financial ecosystem from rising cyber threats. The session explored how the framework strengthens protection, detection, response, and recovery mechanisms for SEBI-regulated entities such as stock exchanges, brokers, mutual funds, depositories, and merchant bankers.

Dr. Sourav Maheshwari elaborated on the rationale and structure of CSCRF, aligning it with international standards like ISO 27001 and NIST 800-53. He explained that the framework promotes governance-driven cyber resilience through its five resilience goals – anticipate, withstand, contain, recover, and evolve, and six core functions – govern, identify, protect, detect, respond, and recover. The discussion covered SEBI's tiered approach, which tailors controls to an entity's size and risk exposure, and introduced the Zero Trust Security Model, emphasizing continuous authentication and limited system access.

Highlighting India's growing vulnerability –

the world's second-most targeted nation for cyberattacks – the speaker stressed the urgency of robust cyber governance and readiness. He discussed SEBI's clarifications on critical systems, vendor risk management, cyber crisis planning, and phased compliance timelines extending up to August 2025. He also introduced the Cyber Capability Index (CCI) – a SEBI initiative to measure and benchmark cyber maturity across 23 parameters.

The session underscored the increasing role of Cost and Management Accountants (CMAs) in cyber governance. CMAs, with their expertise in risk management, cost optimization, and compliance, were urged to act as strategic partners – ensuring that cyber security investments remain risk-aligned and financially prudent. They can support organizations through cyber audits, compliance validation, and cost-benefit analysis of resilience measures.

Dr. Maheshwari emphasized that small entities may leverage shared Market Security Operation Centers (SOCs) or cloud-based models to ensure cost-effective compliance, provided strong Service Level Agreements and vendor controls are maintained. The importance of Cyber Crisis Management Plans, disaster recovery (RTO/RPO), and certifications like ISO 27001 was highlighted to ensure business continuity and regulatory alignment.

The session concluded with a call for continuous learning, certifications, and active participation of CMAs in the national cyber resilience framework. Participants acknowledged the BFSI Board's commitment to ongoing training and awareness programmes, reaffirming that cyber resilience is not just a technical mandate but a financial and governance imperative for the evolving capital market ecosystem.

Webinar on “Securing Generative AI, Large Language Models (LLM) and Agentic AI”

18th September 2025



CMA Ravikumar Ramachandran, Practicing Cost Accountant



CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board, ICAI

The webinar opened with the Chairman's contextual address that framed the session's objective: to align technical safeguards for generative and agentic AI with prudential and financial governance in the BFSI sector. The Chair underlined India's recent policy and capability advances and urged practitioners to convert AI potential into measurable, risk-adjusted value while preserving public trust

CHAIRMAN, BFSIB – CMA CHITTARANJAN CHATTOPADHYAY has greeted warm welcome all the dignitaries and participants to join this webinar and delivered a structured opening speech emphasizing regulatory engagement (RBI, SEBI, IRDAI, IFSC), national initiatives for indigenous models and Centers of Excellence, and the Institute's commitment to capacity building. He called upon CMAs to institutionalize independent model validation, auditable decision trails and risk-adjusted cost-benefit analyses to treat AI as a material risk factor in financial firms.

SPECIAL ADDRESS – CMA PARTHA CHOUDHURI (Former CGM, RBI) emphasized

the regulator's proactive stance and the need for principle-based governance. He noted the tension between fostering innovation and ensuring systemic resilience, recommending expert committees, vendor due diligence and stress testing of models to prevent concentration and operational risks.

SPEAKER – CMA RAVIKUMAR RAMACHANDRAN presented the technical core: definitions of GenAI, LLMs and agentic systems; architecture distinctions between LLM and Retrieval-Augmented Generation (RAG); and a threat taxonomy based on OWASP's LLM guidance. He emphasized prompt-injection, data/model poisoning, system-prompt leakage, vector/embedding weaknesses, misinformation and unbounded consumption as principal risks, and proposed layered mitigations – input/output sanitization, least-privilege permissioning, sandboxing, continuous patching, human-in-the-loop approvals, provenance controls for RAG, and parameterization techniques to segregate user inputs from system instructions. The presentation and referenced mitigations are drawn from the speaker's deck



CMAAs must bridge management accounting and technical governance by instituting cost and assurance frameworks for AI, performing independent model and vendor audits, and embedding risk-adjusted ROI and cost-accounting standards for AI investments.

The session concluded with a clear call to

operationalize multi-layered defense, strengthen regulatory compliance and advance AI literacy across institutions; a vote of thanks by CMA Dibbendu Roy, HOD BFSI closed the webinar, reiterating the indispensability of human oversight and accountable stewardship in securing AI for the BFSI sector.



Webinar on “CMA’s Role in Receivables Audit, Stock Audit and Monitoring of End Use of Funds”

27th September 2025



Ms. R Sumitra, Credit Management Specialist



**CMA Chittaranjan Chattopadhyay, Chairman,
BFSI Board, ICAI**

The BFSI Board of the Institute convened an insightful webinar on “CMA’s Role in Receivables Audit, Stock Audit and Monitoring of End Use of Funds” on 27th September 2025, marking the auspicious occasion of Maha Panchami. The session aimed to deliberate on the professional relevance and responsibilities of Cost and Management Accountants in receivables audit, stock audit, and monitoring of end use of funds, which constitute critical pillars of financial discipline and credit assurance in the banking ecosystem.

The session was graced by Ms. Sumitra Raghavan, Credit Management Specialist – Keynote Speaker, who shared extensive insights into the evolving role of CMAs in banking and financial audits, the methodologies governing audit engagements, and the strategic importance of diligent monitoring mechanisms in safeguarding lender interests and ensuring regulatory compliance.

The webinar commenced with a warm welcome address by the organisers and advisors of the BFSI Board, who expressed gratitude to the distinguished speaker for her expertise in credit management and

set the context for the growing importance of Cost and Management Accountants in strengthening the audit framework within the financial services sector. The session began with the institute’s anthem, marking the ceremonial significance of Maha Panchami.

BFSI Advisor CMA Partha Choudhuri highlighted that receivables form the “lifeblood” of any enterprise and that their misstatement can distort the financial health of a business. He explained that while balance sheets may expand, profitability can stagnate when receivables are unrealistic or overstated. He also stressed the lender’s reliance on stock audits, given that stock often serves as collateral. The Reserve Bank of India mandates external audits for large NPAs (above ₹5 crore) to ensure transparency and detect early signs of stress. He cautioned that in the digital lending era, verifying document authenticity and end-use of funds has become increasingly challenging.

In his address, CMA Chittaranjan Chattopadhyay, Chairman of the BFSI Board, appreciated the timeliness of the topic, given rising member queries



on audit procedures and regulatory expectations. He observed that while India's banking sector asset quality has improved, hidden stress persists in receivables and inventory management. He advocated for data-driven continuous assurance, leveraging e-invoices, ERP reconciliations, and digital documentation to improve audit reliability. He further recognised CMAs' growing stature in PSUs, cooperative banks, and regulatory frameworks, acknowledging their crucial role in providing early warning signals on asset quality and credit deterioration.

Ms. Sumitra Raghavan delivered a detailed presentation covering the technical, procedural, and ethical dimensions of receivables and stock audits. She explained that receivables and inventory together account for nearly 80–90% of current assets, forming the basis for working capital finance. Banks depend on CMAs for independent verification, as in-house checks are impractical. Her address examined issues of existence, aging, valuation, liquidity, and concentration risks, with case studies demonstrating how inflated receivables and overstated stock can lead to defaults and major write-offs.

She detailed audit techniques – physical verification,

document-based reconciliation, debtor confirmation, and cross-verification using public databases. She underscored that work-in-progress (WIP) is the most vulnerable component due to valuation ambiguities and manipulation risks. Citing CARO 2020, she urged auditors to avoid reliance solely on management certifications and to report discrepancies transparently with documentary evidence.

The session reinforced that CMAs' independence, ethics, and technical rigour are integral to maintaining asset quality and financial discipline in the credit ecosystem. Effective audits of receivables and stock help prevent over-financing, detect fictitious assets, and ensure proper fund utilization – thereby protecting lenders and improving borrower accountability.

An engaging Q & A session followed, addressing sectoral benchmarks, auditor liability, and digital audit tools. The event concluded with a Vote of Thanks by CMA Dibbendu Roy, Additional Director & HoD, BFSI Dept. appreciating the speaker's in-depth insights and reaffirming the BFSI Board's commitment to strengthening CMA capabilities in audit, compliance, and credit risk governance. ●

Webinar on “Regulatory Framework in the Insurance Sector”

10th October 2025



CMA Ramana Rao Addanki, Chief General Manager (GA & HR), Insurance Regulatory and Development Authority of India (IRDAI)

The BFSIB of the Institute of Cost Accountants of India has organised regulator reached insightful webinar on the topic of “Regulatory Framework in the Insurance Sector” on 10th October 2025 evening aimed at update members on emerging avenues in Insurance sector and outline the procedural requirements for empanelment’s.

The webinar commenced with CMA Dibbendu Roy, Head of Department, extending a warm welcome to the Chief Guest, distinguished members, professionals, and participants. In his opening remarks, he highlighted the growing importance of the insurance sector within the Indian economy and its alignment with India’s financial inclusion and economic resilience goals. He then introduced the distinguished speaker, CMA Ramana Rao Addanki, CGM, IRDAI, appreciating his extensive experience and contributions to the development of the Indian insurance regulatory ecosystem.

CMA Ramana Rao Addanki delivered a

comprehensive and data-backed address on the Regulatory Framework in the Insurance Sector, providing deep insights into the legal, institutional, and supervisory architecture of the Indian insurance industry. He explained the legislative foundations – Insurance Act, 1938; IRDAI Act, 1999; Life Insurance Corporation Act, 1956; and General Insurance Business (Nationalisation) Act, 1972 – which collectively govern insurance operations, licensing, capital adequacy, investment norms, and consumer protection. He elaborated on the duties, powers, and functions of the IRDAI, including policyholder protection, financial soundness oversight, and market conduct regulation.

Highlighting the scale of the sector, he noted that insurance companies in India have investments exceeding ₹ 70 lakh crore, reflecting the sector’s systemic importance. India’s insurance market now stands 10th globally with a premium volume of around USD 138 billion, of which life insurance constitutes 74% and non-life 25%. The industry has



so far paid claims worth USD 95 billion, while the life insurance segment alone commands an AUM exceeding USD 865.52 billion. He stated that India's vision is to become the 6th largest insurance market globally by 2032, driven by expanding penetration, innovation, and regulatory reform.

He described the insurance ecosystem – encompassing insurers, reinsurers, intermediaries, and digital enablers – and explained how insurance differs from other financial businesses, as insurers act as risk takers rather than risk pass-through entities. He discussed the interplay between insurers, reinsurers, banks, and intermediaries in managing uncertainty and ensuring risk diversification. To achieve the Vision 2047 – Viksit Bharat, he emphasised the need for a broader base of nearly 200 insurance players and a regulatory environment fostering innovation and stability.

Elaborating on IRDAI's strategic direction, he stated that the Authority has transitioned from rule-based to principle-based regulation, enabling greater flexibility and accountability. Key forward-looking initiatives include risk-based supervision, risk-based capital regimes, adoption of IND-AS/IFRS standards, InsurTech innovations, and digital transformation platforms like BIMA Sugam – a one-

stop digital marketplace for all insurance services. He also highlighted proposed legislative amendments allowing 100% FDI in insurance intermediaries, revised capital requirements, and the promotion of captive insurance models to support specialised sectors.

CMA Addanki sir also reviewed Government flagship schemes such as PMJJBY, PMSBY, PMFBY, and PMJAY, noting their contribution to social security and insurance inclusion. He provided a lucid explanation of life insurance financial statements, explaining key line items, technical reserves, and accounting principles, and discussed the critical role of auditors in maintaining transparency and governance in insurance financial reporting.

The interactive Q&A session saw active participation from members, clarifying technical and regulatory queries. The webinar concluded with a formal Vote of Thanks by Mr. Dibbendu Roy, who acknowledged the speaker's insightful presentation and the participants' engagement. The session reaffirmed the Institute's commitment to continuous professional upskilling and to strengthening the CMA community's role in India's financial and insurance governance framework.





Seminar on “Fraud & Investigation – Role of Cost and management accountants”

20th September, 2025

The Banking, Financial Services and Insurance (BFSI) Board of the Institute of Cost Accountants of India organised a seminar on “Fraud and Investigation – Role of Cost and Management Accountants”. The programme brought together regulators, senior bankers, industry experts and CMA professionals to deliberate on emerging fraud trends, regulatory responses, and the critical role of CMAs in strengthening forensic audits, governance frameworks, and financial resilience across the BFSI sector.

The Program was hosted by CMA Dibbendu Roy HOD- BFSIB ICAI, and Chaired by CMA Chittaranjan Chattopadhyay, Chairman, BFSIB and Speaker CMA Sanchit Goyal –CGM – SEBI and Chief Guest CMA Balbir Singh, General Manager, Punjab National Bank.

The CMA Chittaranjan Chattopadhyay, Chairman – BFSIB, ICAI opened the seminar by underscoring the urgency of professional stewardship in today’s fast-moving financial ecosystem. He framed fraud prevention and investigation as essential to market trust and financial stability, called for proactive CMA leadership in early detection and governance remediation, and highlighted ICAI/BFSI capacity-building efforts that prepare members for forensic and concurrent-audit roles.

CMA Sanchit Goyal, Assistant General Manager of SEBI outlined how the Investigation Department handles fraud cases through corporate financial and general market probes, highlighting the growing complexity of capital market misconduct and the strong presence of CMA professionals within SEBI. He detailed the regulator’s enforcement toolkit – from administrative warnings and debarment to monetary penalties and prosecutions – and stressed the importance of timely, auditable evidence for effective action. He also pointed to early-warning signals such as rising debtors, related-party transactions, shell entities, management changes, auditor exits,

promoter-share dilution, complex structures, and inconsistent ratios as key red flags. Emphasising the role of CMAs, he advised on focused investigative methods – establishing linkages, quantifying unlawful gains, preserving evidence integrity – noting that motive, opportunity, and concealment remain the pillars of fraud detection and prevention.

From the banker’s viewpoint, the Chief Guest CMA Balbir Singh (GM-PNB) outlined operational and reputational impacts of fraud, the role of CAAT/AML tools in early detection, and the expanding scope for CMAs in bank audits and forensic assignments. He also urged depositor prudence – diversification, due diligence, corporate governance scrutiny and financial literacy as practical defences.

In closing, the seminar reaffirmed that fraud is multi-dimensional and requires multidisciplinary capability. CMAs were positioned as trusted guardians who rebuild transaction timelines, quantify losses, harden control points (trade finance, lending approvals, reconciliations), and convert investigation findings into board-level remediation. Participants were urged to adopt standardized investigation packs, integrate CMAs into model validation and KPI ownership for detection tools, and pursue ICAI’s forensic and BFSI courses to operationalise these competencies in their organisations.

The session concluded with an engaging Q & A discussion, where participants raised practical queries on fraud detection, regulatory enforcement, and the role of CMAs in forensic audits. The speakers addressed these questions with clarity, offering actionable insights and real-world perspectives that enriched the participants’ understanding. This was followed by a formal Vote of Thanks delivered by CMA Dibbendu Roy, Head of Department, BFSI Board-ICAI, who expressed gratitude to the dignitaries, speakers, and attendees for their valuable contributions. The seminar ended on a confident note, reaffirming that CMAs will remain trusted guardians in building transparency, resilience, and good governance across the financial system.



CMA Chittaranjan Chattopadhyay,
Chairman, BFSIB and ACMB of
ICMAI felicitating
CMA Sanchit Goyal, Assistant General
Manager of SEBI, Seminar on
20th September, 2025. (L to R)



CMA Chittaranjan Chattopadhyay,
Chairman, BFSIB and ACMB of ICAI
addressing in the inaugural session of
the Seminar on 20th September 2025.
(extreme right)



CMA Balbir Singh, General Manager,
Punjab National Bank addressing in the
Seminar on 20th September 2025.
(extreme left)

Seminar on “Navigating the Dynamic Regulatory Landscape: Strategic Role of ICAI”

5th October 2025

The BFSI Board, in association with the Western India Regional Council (WIRC) of ICAI, organised a high-level seminar on “Navigating the Dynamic Regulatory Landscape: Strategic Role of ICAI.” The event brought together eminent policymakers, financial regulators, and leading professionals to discuss evolving trends in financial regulation, sustainable finance, and the future of banking and capital markets. The programme was graced by Shri Pradeep Ramakrishnan, Executive Director, Department of Capital Markets, IFSCA, as Chief Guest, and featured distinguished speakers including CMA (Dr.) K. Balu, Former CGM, RBI; CMA Dhiraj Sachdev, Managing Partner & CIO, Roha Asset Managers LLP; and CMA Punit Jain, Director, NIBSCOM. The leadership of ICAI was represented by CMA TCA Srinivasa Prasad, President; CMA Chittaranjan Chattopadhyay, Chairman, BFSIB; and CMA Mihir Narayan Vyas, Chairman, WIRC.

The session commenced with a welcome address by ICAI President CMA TCA Srinivasa Prasad, who greeted all dignitaries, guests, and members. He emphasized the significance of the occasion, highlighting that India’s regulatory landscape is evolving rapidly in response to market dynamics and global developments. Introducing the theme, “Navigating the Dynamic Regulatory Landscape: The Strategic Role of ICAI,” he underlined the need for agility, foresight, and strategic adaptation to technological changes, sustainability imperatives, and governance expectations.

He elaborated on ICAI’s pivotal role in aligning business practices with regulatory frameworks and how CMAs contribute beyond traditional areas to governance, risk management, and sustainability. Citing the BFSI sector’s resilience, he stressed the importance of collaboration with regulatory bodies like RBI, SEBI, and IRDA. Concluding, he noted that emerging technologies such as AI and data analytics can turn compliance into a strategic advantage,

supporting the vision of Viksit Bharat.

Key Proceedings and Highlights

1. Address by Shri Pradeep Ramakrishnan (IFSCA)

Shri Pradeep Ramakrishnan delivered an insightful address on India’s emergence as a global hub for sustainable finance through the International Financial Services Centre (IFSC). He noted that IFSC has mobilised approximately USD 15 billion through the issuance of green, social, and sustainability-linked bonds. Emphasising the importance of responsible finance, he outlined the mandatory lending policy directing banks to allocate a portion of their credit to sustainable projects. He also detailed various incentives for fund managers, including fee exemptions for initial fund launches, and the adoption of international sustainability taxonomies to bolster investor confidence and transparency.

He further highlighted key infrastructure developments – such as the establishment of an international bullion exchange to position India as a global price setter in gold, and the entry of foreign universities offering international curricula within the IFSC ecosystem. He concluded by urging finance professionals to explore the diverse opportunities in the IFSC – from fund management and sustainable finance to bullion trading and international education.

2. Address by CMA (Dr.) K. Balu (Former CGM, RBI)

CMA (Dr.) K. Balu, drawing on his extensive central-banking experience, delivered a lucid and authoritative exposition on the pivotal role of the Reserve Bank of India and the systemic challenges facing India’s financial ecosystem on the path to “Viksit Bharat 2047.” He began by acknowledging the formative role of the professional institute in his career and proceeded to frame the discussion around inflation control, monetary transmission, financial stability, credit creation and the evolving competitive landscape between Banks, NBFCs and Fintechs.

The address underscored inflation control as the RBI's foremost mandate – noting the target band of 2%–6% – and described inflation as a regressive “tax” that impedes growth. He highlighted the stickiness in monetary transmission, whereby banks are slow to cut lending rates but quick to raise them, hence blunting policy effectiveness. Financial stability, he emphasised, is non-negotiable: the enormous scale of UPI and digital payments (with billions of transactions monthly) makes operational resilience and cyber-security imperative.

On credit and banking structure, Dr Balu advocated for responsible credit expansion to raise India's Credit-to-GDP ratio while warning against “toxic asset” creation and loan-dumping practices. He discussed the competitive pressures on Public Sector Banks from nimble NBFCs and Fintechs, urging stronger capitalisation, improved governance and renewed focus on PSBs' social mandate. He flagged ALM risks arising from short-term deposit maturities financing long-term assets and recommended measures (including greater use of floating-rate deposits) to mitigate duration mismatches.

Digitalisation's dual impact formed a key theme: while digital payments and institutions such as NPCI have accelerated velocity of money and reduced cash use, they have also exposed issues in last-mile inclusion, tax compliance shocks and data-driven enforcement. Dr Balu stressed that financial inclusion requires active promotion and retention, not merely technical rollout. He concluded by warning against speculative leverage in equity margin trading and options – noting the asymmetric risks for retail investors facing algorithmic competition – and called for enhanced investor education, stronger corporate governance, superior customer service and prudent CASA management to preserve trust and sustain the banking system's competitive advantage..

3. Address by CMA Dhiraj Sachdev (Managing Partner & CIO - Roha Asset Managers LLP)

CMA Dhiraj Sachdev presented a comprehensive macroeconomic analysis, addressing the interplay between global headwinds and India's robust fiscal and monetary response. He cited ongoing geopolitical protectionism and currency volatility, with FIIs being net sellers worth USD 17 billion in recent months. India's policy countermeasures – including

tax reliefs, RBI rate cuts, liquidity infusions, and a strong CapEx push – have stabilised growth, supported by benign inflation forecasts at 2.6%.

He highlighted structural trends in investment ownership, noting a shift from foreign institutional to domestic retail investors, with monthly SIP inflows of ₹28,000 crore offsetting FII outflows. He identified high-potential sectors such as Automobile, Capital Goods, New-age Tech, Real Estate, Specialty Chemicals, Defence, and Renewables, advocating selective investments in companies with scalable cash flows and prudent governance. He also underscored systemic concerns in banking governance, urging stronger director accountability, improved customer service, and better execution of financial inclusion measures.

Address by CMA Punit Jain (Director, NIBSCOM)

CMA Punit Jain delivered a measured and incisive exposition on the structural and operational imperatives facing the Indian banking system, emphasising governance, customer service, competitive strategy and financial inclusion. He warned that rogue behaviour among directors poses existential risks to banking integrity and public confidence, urging robust director accountability and stronger governance frameworks. Equally, he lamented the persistent shortfall in customer service standards, observing that inadequate client experience and opaque practices erode trust and discourage engagement; he therefore pressed for institutionalised customer-excellence programmes and enforceable service accountability mechanisms.

Mr. Jain also addressed competitive dynamics and product innovation: banks must counter the allure of mutual funds and capital markets by leveraging their intrinsic advantages – deposit insurance, convenience and CASA-driven low-cost funds – while innovating retail and wholesale offerings. He highlighted mutual funds' edge on cost of funds and called for strategic management of deposit and lending rates to preserve sustainable spreads. On systemic policy, he underscored the significance of monetary velocity and real-time payments to catalyse economic activity, and urged vigorous outreach for targeted government schemes to reduce high dropout rates. Concluding, he advocated a holistic reform agenda – better governance, improved customer service, sharper product differentiation and proactive

financial literacy—to restore trust, enhance competitiveness and ensure banking contributes robustly to inclusive economic development.

Address by CMA Mihir Narayan Vyas (Chairman, WIRC, ICAI)

CMA Vyas lauded the exemplary coordination and dedication of the organising teams, noting the successful conduct of 32 professional programmes within 15 days across chapters. He commended the extensive career awareness outreach to over 350 schools, recognising its contribution to professional development and public financial literacy. He highlighted the growing role of cost accountants in strengthening India's capital markets and

emphasised the importance of collaboration, capacity building, and continuous learning.

Conclusion

The seminar concluded with an engaging Q & A session, where delegates discussed key regulatory reforms, financial innovation, and professional opportunities in the evolving BFSI landscape. The session ended with a formal Vote of Thanks to all dignitaries, speakers, and participants for their valuable contributions toward advancing India's financial ecosystem and reinforcing the strategic role of ICAI in regulatory and professional discourse.



Shri Pradeep Ramakrishnan, Executive Director, IFSCA (centre), being felicitated by CMA TCA Srinivasa Prasad, President, The Institute of Cost Accountants of India (second from right), in the presence of CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board, ICAI (second from left), CMA Amit A. Apte, Past President, ICAI (extreme left) and CMA Mihir Vyas, Chairman, WIRC, ICAI (extreme right) of the Seminar on 5th October 2025 at Goa.

CMA TCA Srinivasa Prasad, President, ICAI addressing in the Inaugural Session of the Seminar on 5th October 2025 at Goa.





CMA Chittaranjan Chattopadhyay, Chairman, BFSIB and ACMB of ICAI addressing in the Inaugural Session of the Seminar on 5th October 2025 at Goa.

CMA Chittaranjan Chattopadhyay, Chairman, BFSIB and ACMB of ICAI (extreme left) felicitating CMA Amit A. Apte, Past President, ICAI (centre) along with CMA Mihir Vyas, Chairman, WIRC, ICAI (extreme right) of the Seminar on 5th October 2025 at Goa.



Shri Pradeep Ramakrishnan, Executive Director, IFSCA addressing in the Inaugural Session of the Seminar on 5th October 2025 at Goa.

CMA Chaitanya Laxmanrao Mohrir,
Secretary, WIRC, ICAI felicitating
CMA (Dr.) Balu Kenchappa, Former
CGM, RBI of the Seminar on 5th October
2025 at Goa. (L to R)



CMA (Dr.) Balu Kenchappa, Former
CGM, RBI addressing in the 1st
Technical Session of the Seminar
on 5th October 2025 at Goa.

CMA Nanty Nalinkumar Shah, Vice
Chairman, WIRC, ICAI felicitating
CMA Punit Jain, Director, NIBSCOM
of the Seminar on 5th October 2025 at
Goa. (R to L)





CMA Punit Jain, Director, NIBSCOM addressing in the 2nd Technical Session of the Seminar on 5th October 2025 at Goa.

CMA Vivek Gajanan Bhalerao, RCM, WIRC, ICMAI felicitating CMA Dhiraj Sachdev, CIO Roha Venture LLP of the Seminar on 5th October 2025 at Goa. (L to R)



CMA Dhiraj Sachdev, CIO Roha Venture LLP addressing in the 3rd Technical Session of the Seminar on 5th October 2025 at Goa.



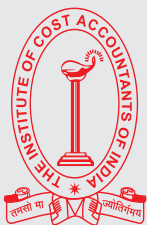
Brochures – Courses Offered By The BFSI Board



Brochure

Advance Certificate Course on **FinTech**

Banking, Financial Services and Insurance Board



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Statutory Body under an Act of Parliament

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Behind every successful business decision, there is always a **CMA**



Advance Certificate Course on FinTech | The Institute of Cost Accountants of India



About The Institute

The Institute of Cost Accountants of India (ICMAI) is a statutory body set up under an Act of Parliament in the year 1959. The Institute as a part of its obligation, regulates the profession of Cost and Management Accountancy, enrolls students for its courses, provides coaching facilities to the students, organizes professional development programmes for the members and undertakes research programmes in the field of Cost and Management Accountancy. The Institute pursues the vision of cost competitiveness, cost management, efficient use of resources and structured approach to cost accounting as the key drivers of the profession. In today's world, the profession of conventional accounting and auditing has taken a back seat and cost and management accountants increasingly contributing towards the management of scarce resources like funds, land and apply strategic decisions. This has opened up further scope and tremendous opportunities for cost accountants in India and abroad.

International Affiliation

The Institute is a founder member of International Federation of Accountants (IFAC), Confederation of Asian and Pacific Accountants (CAPA) and South Asian Federation of Accountants (SAFA). The Institute is also an Associate Member of ASEAN Federation of Accountants (AFA) and member in the Council of International Integrated Reporting Council (IIRC), UK.

Institute's Network

Institute's headquarters is situated at New Delhi with another office at Kolkata. The Institute operates through four Regional Councils at Kolkata, Chennai, Delhi and Mumbai as well as through 117 Chapters situated in India, 11 Overseas Centres abroad, 2 Centres of Excellence, 61 CMA Support Centres and 401 Recognized Oral Coaching Centres.

Institute's Strength

The Institute is the largest Cost & Management Accounting body in the World, having a large base of about 1,00,000 CMAs either in practice or in employment and around 5,00,000 students pursuing the CMA Course.

Vision Statement

"The Institute of Cost Accountants of India would be the preferred source of resources and professionals for the financial leadership of enterprises globally."

Mission Statement

"The Cost and Management Accountant professionals would ethically drive enterprises globally by creating value to stakeholders in the socio-economic context through competencies drawn from the integration of strategy, management and accounting."

Course Objective

The Banking, Financial Services and Insurance Board is pleased to offer "Advance Certificate Course on FinTech". It is pertinent to mention that there is a significant demand for FinTech-qualified individuals in GIFT City, Gandhinagar, and Ahmedabad. India's inaugural International Financial Services Centre (IFSC) at GIFT City offers Indian corporates expanded access to Global Financial Markets. Entities Established within the IFSC also enjoy numerous Tax Benefits. IFSCs play a Crucial Role in Fostering the development of "Fintech Hubs". Given the substantial number of Indian Professionals Working in "FinTech Abroad", India has the Potential to Emerge as a Prominent "Fintech Hub".

This Advanced Certificate Course on **FinTech** covers the following Learning Objectives:

- ▲ Foundations of Fintech.
- ▲ Deep Dive into Blockchain.
- ▲ Fintech Innovation in Banking.
- ▲ Fintech Transforming Wealth Management.
- ▲ Fintech Revolutionising Insurance.
- ▲ Exploring New Frontiers of Fintech.

Online Admission Link:
<https://eicmai.in/advsc/DelegatesApplicationForm.aspx>

CPE Credit: 10 hours
 for members of The Institute of Cost Accountants of India

Course Eligibility

CMAs, Bankers (including Payment Banks, Small Finance Banks, Regional Rural Banks, Co-operative Banks, NBFCs., Scheduled Commercial Banks (Private Sectors, Public Sector and Foreign Banks), CMA Final Students, Graduates, IT Professionals.

Course Duration

- a. Classroom Learning of 2 hours per day in the Weekend through online mode
- b. 50 hours online Coaching
- c. 3 months' course
- d. Online Examination for 100 marks

Course Fees

Course Fees (including learning kit) of Rs. 10,000/- plus GST of 18%

Examination

Rs. 750 plus GST per attempt

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Detailed Course Content

1: Introduction to Fintech

- ▲ Cloud Computing and APIs.
- ▲ Opensource Architecture.
- ▲ Blockchain Technology and DApps.
- ▲ Business Intelligence: AI & ML.
- ▲ Cyber Security.
- ▲ Generative AI.

2: Technology Innovation & Fintech Evolution

- ▲ Understanding Financial Crisis.
- ▲ The building blocks of Blockchain.
- ▲ Public versus private blockchain.
- ▲ Understanding Smart Contracts.
- ▲ Web 2.0 versus Web.
- ▲ Decentralized finance.

3: Blockchain

- ▲ Fintech and Disruption in Banking.
- ▲ Banking as a Service Model.
- ▲ Loan Apps and P-2-P lending.
- ▲ Open Banking Architecture.
- ▲ Case Study.

4: Fintech and Banking

- ▲ Robo-advising: The Digital Financial advisor
- ▲ Goal Based Investing
- ▲ Disintermediation of Asset Management
- ▲ Digital transformation of Wealth Management
- ▲ Case Study

5: Fintech and Asset Management

- ▲ Usage based Insurance and Microinsurance
- ▲ Machine Underwriting and Smart Contracts
- ▲ Probabilistic to Deterministic Models
- ▲ Insuring the uninsured
- ▲ Case Study

6: Fintech and Insurance

- ▲ Global Payment Ecosystem
- ▲ Payment and Digital Wallets
- ▲ Programmable Payments

- ▲ B2B and B2C Payment services
- ▲ Case Study

7: Fintech and Payments

- ▲ iCOs, Bitcoin, and beyond
- ▲ Crypto as an asset class
- ▲ Crypto Trading Strategies
- ▲ Non-Fungible Tokens
- ▲ Case Study

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Contact for further queries

CMA Dibbendu Roy, Additional Director & HoD at bfsi.hod@icmai.in
CMA (Dr.) Aditi Dasgupta, Joint Director at bfsi@icmai.in



ICMAI THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

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CMA Bhawan, 3, Institutional Area, Lodhi Road, New Delhi - 110003

Kolkata Office:

CMA Bhawan, 12, Sudder Street, Kolkata - 700016

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Banking, Financial Services & Insurance Board

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Certificate Course on Credit Management in Banks



About The Institute

The Institute of Cost Accountants of India was first established in **1944** as a registered company under the Companies Act with the objects of promoting, regulating and developing the profession of Cost Accountancy. On **28th May, 1959**, the Institute was established by a special **Act of Parliament**, namely, the **Cost and Works Accountants Act, 1959** as a statutory professional body for the regulation of the profession of Cost and Management accountancy. The Institute is under the administrative control of **Ministry of Corporate Affairs, Government of India**.

The Institute has since been continuously contributing to the growth of the industrial and economic climate of the country. The Institute is the only recognised statutory professional organisation and licensing body in India specialising exclusively in Cost and Management Accountancy.

International Affiliation

The Institute of Cost Accountants of India is Founder member of International Federation of Accountants (IFAC), Confederation of Asian & Pacific Accountants (CAPA) & South Asian Federation of Accountants (SAFA). The Institute, being the only institution from India, is a member of the Accounting Bodies Network (ABN) of The Prince's Accounting for Sustainability (A4S) Project, UK and International Valuation Standards Council (IVSC), UK.

Institute's Strength

The Institute is the largest Cost & Management Accounting body in the World, having a large base of about 1,00,000 CMAs either in practice or in employment and around 5,00,000 students pursuing the CMA Course.

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Course Objective

The world is increasingly getting inter-connected and complex. Bank Credit mechanism has also undergone phenomenal changes in recent years. Few years ago, Credit meant only Cash Credit, Overdraft and Term Loan. Today quasi credit facilities like Letters of Credit, Bank Guarantees, Co-acceptances, Buyer's Credit and Supplier's Credit etc. are gaining predominance. Keeping in view of importance of Credit Management by banks, The Institute of Cost Accountants of India offers the **Certificate Course on Credit Management (CCCM)**.

Professionals dealing with Finance or Financial Institutions in one way or other need to possess knowledge of 'Credit Management' guidelines of Financial Institutions like Banks, so that they can provide Value Additive Services to their clients like recommending to the banks the business proposals of entrepreneurs, performing preliminary credit appraisal on behalf of the banks and collate additional supporting information required by the banks/credit institutions etc.

In addition to the above, this course is also useful to the professionals who are dealing with:

- ✓ Various assignments like Forensic Audit, Stock and Book Debts Auditor (As recognized by IBA)
- ✓ Issuance of Compliance Certificate for Banks by practicing professionals in areas like Consortium and Multiple Lending by Banks (RBI Guidelines)
- ✓ Acting as Agencies for Specialized Monitoring (As recognized by IBA)
- ✓ Assignments like 'Concurrent Audit' of Banks and 'Credit Audit' of the Banks.

The Course provides a holistic insight into the various dimensions in Bank Credit Management.

Online Admission Link:

<https://eicmai.in/advsc/DelegatesApplicationForm.aspx>

CPE Credit: 10 hours

for members of The Institute of Cost Accountants of India

Course Eligibility

FCMA/ACMA/those who have qualified Final CMA examination, Final year Students of the CMA Course/Any Graduate.

Course Duration

- a) Classroom Learning of 3 hours per day in the Weekend through online mode
- b) 50 Hours on-line Coaching.
- c) 2 months course
- d) Online Examination for 100 marks

Course Fees

Course Fees (including learning kit) of Rs. 6,000/- plus GST of 18%. Final year Students of the CMA course for an amount of Rs. 4,500 plus GST of 18%.

Special Discount for Corporates

For number of employees 5-10, discount is 15%. For number of employees more than 10, discount is 20%

Examination

Rs. 750 plus GST per attempt.



Detailed Course Content (Syllabus-2024)

1. Introduction & Overview of Credit (Module 1)

- a. **Principles of Lending:** Safety, Liquidity, Profitability, Purpose of the Loan, Diversification Risk.
- b. **Credit Policy:** Importance, Contents, Exposure Norms.
- c. **Types of Borrowers:** Individuals, Proprietorship Firms, Partnership Firms, Private & Public Limited Companies, Limited Liability Partnerships (LLP).
- d. **Types of Credit Facilities:** Various Types of Credit Facilities-Cash Credit, Overdrafts, Demand Loan, Term Loans, Bills Discounting.
- e. **Credit Delivery:** Sole Banking Arrangement, Multiple Banking Arrangement, Consortium Lending, Syndication.
- f. **Environmental Appraisal:**
Physical Risks: Flood Risk – Drought / Water Scarcity Risk – Storms Risk – Extreme Heat Risk – Wildfires Risk – Other Risks.
Transition Risks: Emissions / Intensity Risk (Scope 1 & 2) - Emission / Intensity Risk (Scope 3) – ESG – Indicators / Rating (Third Party).
- g. **Credit Appraisal:** Validation of proposal, Dimensions of Credit Appraisals, Credit Risk, Credit Worthiness of Borrower, Purpose of Loan, Source of Repayment, Cash Flow, Collaterals, Guidelines on CERSAI.
- h. **Project / Term Loan Appraisal:** Technical Appraisal, Commercial / Market Appraisal, Managerial Appraisal, Financial Appraisal, Economic Appraisal, Project Cost & Means of Finance, Cost of Production & Profitability, Sensitivity Analysis, Break-even Analysis, Capital Budgeting-Pay Back Period Method, Time Value Money, Net Present Value, Internal Rate of Return, Life of the Project.
- i. **Credit Rating:** Objective of Rating, Internal & External Rating, Model Credit Rating, Measurement of Risk, Methodology of Rating, Internal & External Comparison, Model Rating Formats.
- j. **Documentation:** Meaning, Importance, Types of documents, Requisites of documentation, stamping of different documents, Mode and time of Stamping, Remedy for un-stamped / under stamped documents, Documents of which registration is compulsory, Time limit of registration, Consequence of non-registration, Execution, Mode of Execution by different executants, Period of Limitation, Law of Limitation to Guarantor, Extension of period of limitation.
- k. **Types of Charges:** Purpose, Various types of charges, Types of Security, Mode of charge, Lien, Negative Lien, Set Off, Assignment, Pledge, Right of Banker as a Pledgee, Duties as a Pledgee, Mode of Charges, Hypothecation, Mortgage - different types of mortgages, Difference between Simple and Equitable Mortgage.

2. Analysis of Financial Statements (Module 2)

- a. **Analysis of Financial Statements:** Classification of Assets & Liabilities, Current Assets, Fixed Assets, Non-current Assets, Intangible & Fictitious Assets, Liabilities-Current Liabilities, Medium & Term Liabilities, Capital & Reserve.
- b. **Analysis of Profit & Loss Account, Auditor's Note.**
- c. **Ratio Analysis:** Classification of Ratios, Liquidity Ratios, Leverage Ratios, Activity Ratios, Profitability Ratios, Interpretation of important Financial Ratios, Fund Flow Statements and Cash Flow Statements.



Certificate Course on Credit Management in Banks



3. Working Capital Management (Module 3)

- a. **Working Capital Assessment:** Concept of Working Capital, Gross Working Capital, Net Working Capital, Working Capital Gap, Components of Working Capital, Source of Working Capital, Operating / Working Cycle, Various Methods of Assessment of Working Capital, Computation of Working Capital - Turnover Method, MPBF Method, Cash Budget System, Analysis of CMA Data.
- b. **Quasi Credit Facilities:** Advantages of Non-Fund Facilities, Various types of NFB Facilities, Various types Letter of Credits, Assessment of LC limits, Bills Purchase / Discounting under LC.
- c. **Various types of Bank Guarantees:** Performance Guarantee, Financial Guarantees, Deferred Payment Guarantees, Types of Performance and Financial Guarantees, Assessment of Bank Guarantees Limit, Period of Claim under Guarantee.

4. Other Credits (Module 4)

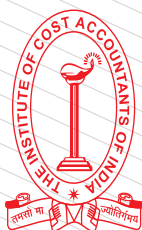
- a. **Export Finance:** Pre-Shipment Finance-Export Packing Credit in Rupees, Pre-Shipment Credit in Foreign Currency (PCFC), Post Shipment Rupee Export Finance, Purchase / Discount of Export Bills, Negotiation of Export Bills, ECGC Coverage in Export / Import Finance.

5. Monitoring, Supervision, Follow-up & Management of Impaired Assets (Module 5)

- a. **Credit Monitoring, Supervision, Follow-Up:** Credit Monitoring-Check-list, Monitoring by using Various Statements, QIS Formats / Guidelines, Supervision & Follow Up Loans.
- b. **Expected Credit Loss (ECL):** Introduction & Evolution of Provisioning of Banks in India- Incurred Loss Approach Vs. Expected Credit Loss Approach- "Loan Loss Provisioning based on ECL -IFRS 9-Calculation of ECL on Retail / Commercial Advances Examples.
- c. **Management of Impaired Assets:** Income Recognition and Assets Classification, Guidelines, Provisioning Norms for NPA, Wilful Defaulters, Compromise, Legal Action, Lok Adalat, Debt Recovery Tribunal, SARFAESI Act, 2002, IBC-2016, Loans Write-Off.

Contact for further queries

CMA Dibbendu Roy, Additional Director & HoD at bfsi.hod@icmai.in
CMA (Dr.) Aditi Dasgupta, Joint Director at bfsi@icmai.in



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Behind Every Successful Business Decision, there is always a **CMA**

Banking, Financial Services & Insurance Board

CERTIFICATE COURSE ON CONCURRENT AUDIT OF BANKS

BROCHURE



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The Institute has since been continuously contributing to the growth of the industrial and economic climate of the country. The Institute is the only recognised statutory professional organisation and licensing body in India specialising exclusively in Cost and Management Accountancy.

International Affiliation

The Institute of Cost Accountants of India is Founder member of International Federation of Accountants (IFAC), Confederation of Asian & Pacific Accountants (CAPA) & South Asian Federation of Accountants (SAFA). The Institute, being the only institution from India, is a member of the Accounting Bodies Network (ABN) of The Prince's Accounting for Sustainability (A4S) Project, UK and International Valuation Standards Council (IVSC), UK.

Institute's Strength

The Institute is the largest Cost & Management Accounting body in the World, having a large base of about 1,00,000 CMAs either in practice or in employment and around 5,00,000 students pursuing the CMA Course.

Institute's Network

Institute's headquarters is situated at New Delhi with another office at Kolkata. The Institute operates through four Regional Councils at Kolkata, Chennai, Delhi and Mumbai as well as through 117 Chapters situated in India, 11 Overseas Centres abroad, 2 Centres of Excellence, 61 CMA Support Centres and 401 Recognized Oral Coaching Centres.

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Mission Statement

"The Cost and Management Accountant professionals would ethically drive enterprises globally by creating value to stakeholders in the socio-economic context through competencies drawn from the integration of strategy, management and accounting."

Course Objective

The Banking, Financial Services and Insurance Board is pleased to offer **Certificate Course** on **"Concurrent Audit of Banks"** to enable participants to understand the intricacies of Concurrent Audit of Banks.

This course aims to impart in-depth knowledge on concurrent audit of banks and to help the participants to acquire with the knowledge/skills to undertake related assignments/Special Audits of the Banks like:

- ⦿ Income Leakage Audit
- ⦿ KYC/AML Audit
- ⦿ Treasury Department Audit
- ⦿ Staff Accountability Exercise in respect of Failed/NPA Advances at incipient Stage
- ⦿ To supplement the effort of the Banks in carrying out Internal Audit of the Transactions and other Verifications and Compliance with the Systems and Procedures laid down by the Banks and RBI

Online Admission Link:

<https://eicmai.in/advsc/DelegatesApplicationForm.aspx>

CPE Credit: 10 hours

for members of The Institute of Cost Accountants of India

Course Eligibility

FCMA/ACMA/those who have qualified Final CMA examination, Bank Officer or Ex-Bank Officer.

Course Duration

- a) Classroom Learning of 3 hours per day in the Weekend through online mode
- b) 30 Hours on-line Coaching
- c) 2 months course
- d) Online Examination for 100 marks

Course Fees

Course Fees (including learning kit) of Rs. 5,000/- plus GST of 18 %.

Special Discount for Corporates

For number of employees 5-10, discount is 15%. For number of employees more than 10, discount is 20%

Examination

Rs. 750 plus GST per attempt.



Detailed Course Content (Syllabus-2024)

- 1. Types of Audits in Banks Sector.**
 - 1.1 Risk Focused Internal Audit (RFIA).
 - 1.2 Credit Audit / Stock & Book Debts Audit / Statutory Audit.
 - 1.3 Concurrent Audit / e-Concurrent Audit etc.
- 2. Role of Concurrent Auditor.**
 - 2.1 Verification of Deposit, Advance Accounts.
 - 2.2 Verification of Locker System, Cash Department Procedures, Alternative Delivery Channels etc.
 - 2.3 Unit Inspection, End-use of Funds, Staff Accounts etc.
- 3. Credit, Market and Operational Risks.**
 - 3.1 Credit Risk Areas.
 - 3.2 Market Risk Areas.
 - 3.3 Operational Risk Areas.
- 4. Loans and Advances.**
 - 4.1 Demand Loans.
 - 4.2 Term Loans.
 - 4.3 Overdrafts, Working Capital Loans and Working Capital Term Loans.
 - 4.4 Home Loans, Car Loans, Personal Loans, Mortgage Loans, Education Loans etc.
- 5. Credit Process: Pre-sanction, Sanction & Post-sanction.**
 - 5.1 KYC, Verification of Application / Project Report, CIBIL, CIC Reports.
 - 5.2 Appraisal, Projections etc.
 - 5.3 Verification of Proposal, Sanction and Submission of Control Forms.
 - 5.4 Documentation, Types of Charges, Equitable Mortgage, Disbursement, etc.
- 6. Pre-shipment and Post-shipment Finance.**
 - 6.1 UCPDC Guidelines – FEDAI Guidelines – FEMA Guidelines.
 - 6.2 Pre-shipment packing credit Advance.
 - 6.3 Discounting of Export Bills / Import Bills payment etc.
- 7. Common Serious Lapses in Sanction, Follow-up & Documentation.**
 - 7.1 Delegation of Powers.
 - 7.2 Take-over Norms.
 - 7.3 Wrong Documentation.
 - 7.4 Stock Statements, Insurance for both Primary and Collateral Security, Monitoring of SMA-0 to SMA-2 Accounts.
- 8. Legal and Regulatory Frame.**
 - 8.1 RBI Act and Banking Regulation Act.
 - 8.2 Limitation Act.
 - 8.3 Registration Act.
 - 8.4 Indian Stamp Act.
 - 8.5 Limitation Act.
 - 8.6 SARFEASI Act and CERSAI etc.
 - 8.7 KYC/AML Guidelines.
- 9. IRAC Provisioning Norms.**
 - 9.1 Classification of Advances.
 - 9.2 Provision requirements.
- 10. Non-fund-based Business**
 - 10.1 Types of Bank Guarantees.
 - 10.2 Types of Letters of Credits.
 - 10.3 Margins, Collateral Security, Standard formats of BGs / LCs, Commission on BGs / LCs.
- 11. Operational Risk Management – ORM-I**
 - 11.1 Job Rotation–Staff Attendance–Branch Documents–Security Forms.
 - 11.2 Security Systems (Fire-Extinguisher, Smoke Detectors, Gun Licences etc.), Currency Chest Fitness Certificate–Disaster Recovery Management– Business Continuity Plan etc.
 - 11.3 Safe Deposit Lockers, Safe Deposit Articles, Deceased Claims Settlement etc.
- 12. Operational Risk Management – ORM-II**
 - 12.1 Complaints–Banking Ombudsman–Customer Forums.
 - 12.2 Branch Duplicate Keys–Reconciliation of Office Accounts–Parking Accounts–Recovery of Service Charges–Income Leakages etc.
 - 12.3 Display of Import Notice Boards–Cheque Truncation System–Complaints and Suggestion Box–Police Beat–ATM Cash Replenishment Outsourcing Agencies (Service Level Agreements).
- 13. Forex Transactions.**
 - 13.1 Opening of NRE / NRO / FCNR / RFC accounts.
 - 13.2 Purchase & Sale of Foreign Currency Cheques / Currency / Export & Import Bills–Forex Rates.
 - 13.3 Submission of R>Returns to RBI.
 - 13.4 Verification of SWIFT Message Inward / Outward Remittances.
 - 13.5 Nostro, Vostro and Loro Accounts etc.
- 14. Detection, Classification & Reporting of Frauds**
 - 14.1 Classification of Frauds–Internal & External Frauds.
 - 14.2 Provisions / Recovery Efforts of Frauds.
 - 14.3 Disciplinary action initiation / Reporting of Frauds to RBI through On-line.
- 15. Tools for Concurrent Audit of Banks**
 - 15.1 Bank Systems and Procedures / Standard Operating Procedures.
 - 15.2 Current Chest Guidelines of RBI.
 - 15.3 Delegation of Financial Powers.
 - 15.4 Service Charges etc.
- 16. Audit in CBS Environment.**
 - 16.1 Core Banking System-Major functionalities.
 - 16.2 Reports Generated by CBS like Exceptional Reports, Suspicious Transactions Reports etc.
 - 16.3 Treasury Management Solutions-Front, Mid and Back-office Reports etc.
- 17. ESG Lending Audit.**
 - 17.1 Overview of Sustainability-linked Loans.
 - 17.2 Principles of Sustainability-linked Loans.
 - 17.3 Value Statements of Social and Environment Audit.
- 18. Expected Credit Loss Provisions.**
 - 18.1 Expected Credit Loss (ECL) Framework.
 - 18.2 Verification of Stage-1, Stage-2 and Stage-3 Loan Portfolio by Auditors.
 - 18.3 Implementation of Regulatory Guidelines on ECL.



Certificate Course on Concurrent Audit of Banks



Contact for further queries

CMA Dibbendu Roy, Additional Director & HoD at bfsi.hod@icmai.in
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Banking, Financial Services & Insurance Board

CERTIFICATE COURSE ON TREASURY AND INTERNATIONAL BANKING



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Certificate Course on Treasury and International Banking

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Mission Statement

"The Cost and Management Accountant professionals would ethically drive enterprises globally by creating value to stakeholders in the socio-economic context through competencies drawn from the integration of strategy, management and accounting."

Course Objectives

Treasury Management is an essential function of a Bank or any Entity dealing with Large volume of funds. With the increased Globalization of Markets, it has become essential to have an in-depth knowledge of the functioning of the Domestic Money and Debt Markets as also the Foreign Exchange Markets for effective management of funds. On account of several Policy measures undertaken by Reserve Bank of India (RBI) and other Regulatory Authorities, different segment of financial markets (Money, Securities, Foreign Exchange and Derivatives Markets) have witnessed significant growth and development in terms of new financial instruments, number of players, volume of business, etc.

In the light of such developments, treasury functions in Banks, FIs and Corporates have grown manifold and therefore have become challenging to manage. Therefore, it has become indispensable for Banks, Financial Institutions and Corporates to make their newly inducted treasury officers well versed with various segment of the financial market, different products and operations, so that they not only serve their clients better, but also manage the risks inherent in Treasury.

Practicing CMAs who dealing with their Clients are in one way or other linked to Finance and Financial related Issues. Hence, they should possess Good knowledge of 'Treasury Operations', so that they can provide Value Addition Services to their Clients. Treasury Operations of Banks and Commercial Organizations are more or less with difference of Regulatory Compliance. Even in small business entities, Treasury Operations helps a lot to minimize the Cost of Borrowings and Maximize the Yield on Investments etc.

In addition to the above, this course is also useful to CMAs who are:-

- Empanelled with Banks for Treasury Audit and Forex Audit.
- For Forensic Audit of Treasury Operations / Forex Operations in Banking Industry
- In Credit Audit, if the Bank Sanctions Loans to Clients like Pre-shipment and Post Shipment Packing Credit Advance, this course is also useful.
- And also, useful to take up the Assignments like 'Concurrent Audit in Treasury Department' of Banks, Commercial entities etc.

The Course provides a holistic insight into the various dimensions in Bank Treasury and Forex Operations.

Online Admission Link:

<https://eicmai.in/advsc/DelegatesApplicationForm.aspx>

CPE Credit: 10 hours

for members of The Institute of Cost Accountants of India

Course Eligibility

FCMA/ACMA/those who have qualified Final CMA examination, Final year Students of the CMA Course/Any Graduate.

Course Duration

- Classroom Learning of 3 hours per day in the Weekend through online mode
- 50 Hours on-line Coaching.
- 2 months course
- Online Examination for 100 marks

Course Fees

Course Fees (including learning kit) of Rs. 6,000/- plus GST of 18%. Final year Students of the CMA course for an amount of Rs. 4,500 plus GST of 18%.

Special Discount for Corporates

For number of employees 5-10, discount is 15%. For number of employees more than 10, discount is 20%

Examination

Rs. 750 plus GST per attempt.

Syllabus

SECTION - 1

a. Introduction to the Money Market:

- ✓ Economic Function-Definition-Classification of Intermediaries
- ✓ Types of Markets-Participants-Nature of Domestic Market
- ✓ Repurchase Agreements

b. Capital Markets:

- ✓ Economic Function
- ✓ Classification of Instruments-by Issuer and Types
- ✓ Principles of Valuation

c. Foreign Exchange Markets:

- ✓ Introduction-Definitions-Direct and Indirect Quotations: Cross Rates, Factors affecting Exchange Rates
- ✓ Relationship with Market Operations-Financing Spot Operations Interest Arbitrage-Forward-Forward Business
- ✓ Forward Transactions-Factors affecting / influencing forward rates
- ✓ Premiums: Discounts, Forward Cross Rates
- ✓ Swap Transactions
- ✓ Outright Deals

d. External Markets:

- ✓ External Commercial Borrowings
- ✓ GDRs / ADRs

e. Derivatives Markets:

- ✓ Introduction – Definition and Characteristics of FUTURES, SWAPS and OPTIONS
- ✓ Elementary Hedge Applications

SECTION - 2

a. Scope and Function of Treasury Management:

- ✓ Objectives of Treasury
- ✓ Structure and Organisation
- ✓ Responsibilities of Treasury Manager

b. Cost Centre / Profit Centre:

- ✓ Financial Planning and Control
- ✓ Capital Budgeting
- ✓ Risk Analysis

c. Liquidity Management:

- ✓ Objectives
- ✓ Sources of Liquidity
- ✓ Maturity Concerns: Projected Cash Flow and Core Sources Contingency Plans
- ✓ Short term and Long-term Liquidity
- ✓ Maturity Ladder Limits
- ✓ Internal Control – The Need and Importance – Financial and Operational risks – Internal vs External Control Segregation of Duties among Front and Back Offices – Management Information – Netting

d. Treasury's Role in International Banking:

- ✓ Changing Global Scenario and Treasury Functions
- ✓ Treasury Structure- Front and Back Office
- ✓ Control of Dealing Operations – Trading Limits – Trading and Operational Policy – Moral and Ethical aspects
- ✓ Confirmations

e. Revaluation Mark to Market and Profit Calculations:

- ✓ Supervision and Exchange Control Departments
- ✓ RBI requirements
- ✓ Recent Developments in the Central Bank's Policy Framework

f. ESG Investments Trading:

- ✓ What is ESG Investing?
- ✓ How does ESG investing work?
- ✓ Why it is important to consider the environment while investing?
- ✓ How important it is to consider socially aware companies while investing?
- ✓ How important role does a company's corporate governance place for investors?
- ✓ Issuance requirements of Green Bonds.

SECTION - 3

a. Introduction:

- ✓ Meaning of Risk in Banking Operations-Financial and Non-Financial Risks
- ✓ Risk Process
- ✓ Key Risks in Relation to Treasury Management – Interest Rate Risk, Currency Risk, Liquidity Risk, Credit Risk and Operational Risk



Certificate Course on Treasury and International Banking

Syllabus

b. Measurement and Control of Risk:

- ✓ Identifying Measures and Controlling Risk – Statistical Methods
- ✓ Risk Exposure Analysis
- ✓ Risk Management Policies
- ✓ Fixation and Delegation of Limits
- ✓ Different Limits- Open Position / Asset Position Limits/ Deal Size/Individual Dealers/Stop Loss Limits

c. Assets Liability Management:

- ✓ Components of Assets and Liabilities –

- History of AL Management
- ✓ Organisational and Functions of ALCO
- ✓ Management and Interest rate Exposure / Liquidity
- ✓ Risk Adjusted Return on Capital
- ✓ Capital Adequacy Concerns

d. Hedging the Risk:

- ✓ Forward, Futures and Options Market
- ✓ Mechanics of Futures
- ✓ Foreign Currency Futures Market
- ✓ Options Market- Options Strategies
- ✓ Hedging Strategies and Arbitrage
- ✓ Call Options and Put Options

Contact for further queries

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Snapshots





CMA Chittaranjan Chattopadhyay, Chairman, BFSIB and ACMB of ICMAI addressing in the IICA North East Conclave on 12th July 2025.



CMA Chittaranjan Chattopadhyay, Chairman, BFSIB and ACMB of ICMAI felicitating Shri Arnab Kumar Chowdhury, Executive Director, Reserve Bank of India (RBI) on 15th July 2025. (L to R)



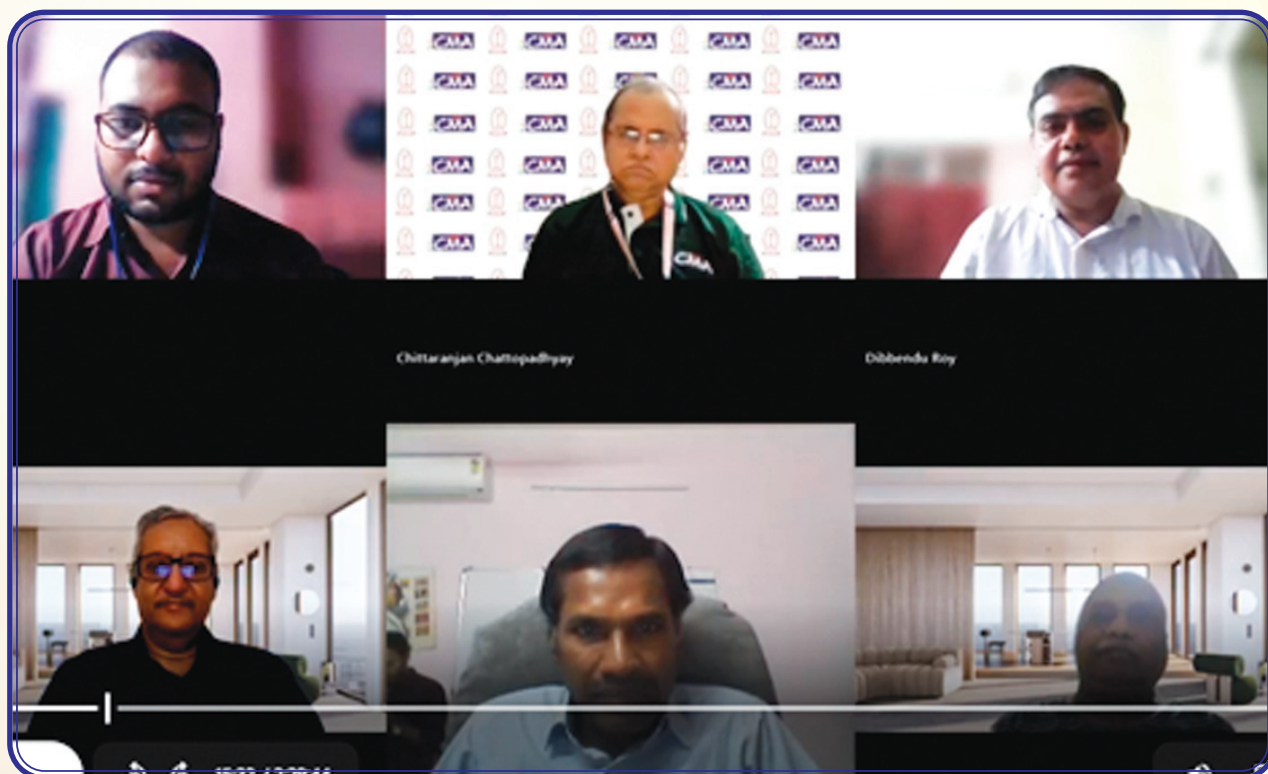
CMA Chittaranjan Chattopadhyay, Chairman, BFSIB and ACMB of ICAI felicitating Shri NDSV Nag-eswara Rao, CGM, State Bank of India (SBI) on 15th July 2025. (R to L)



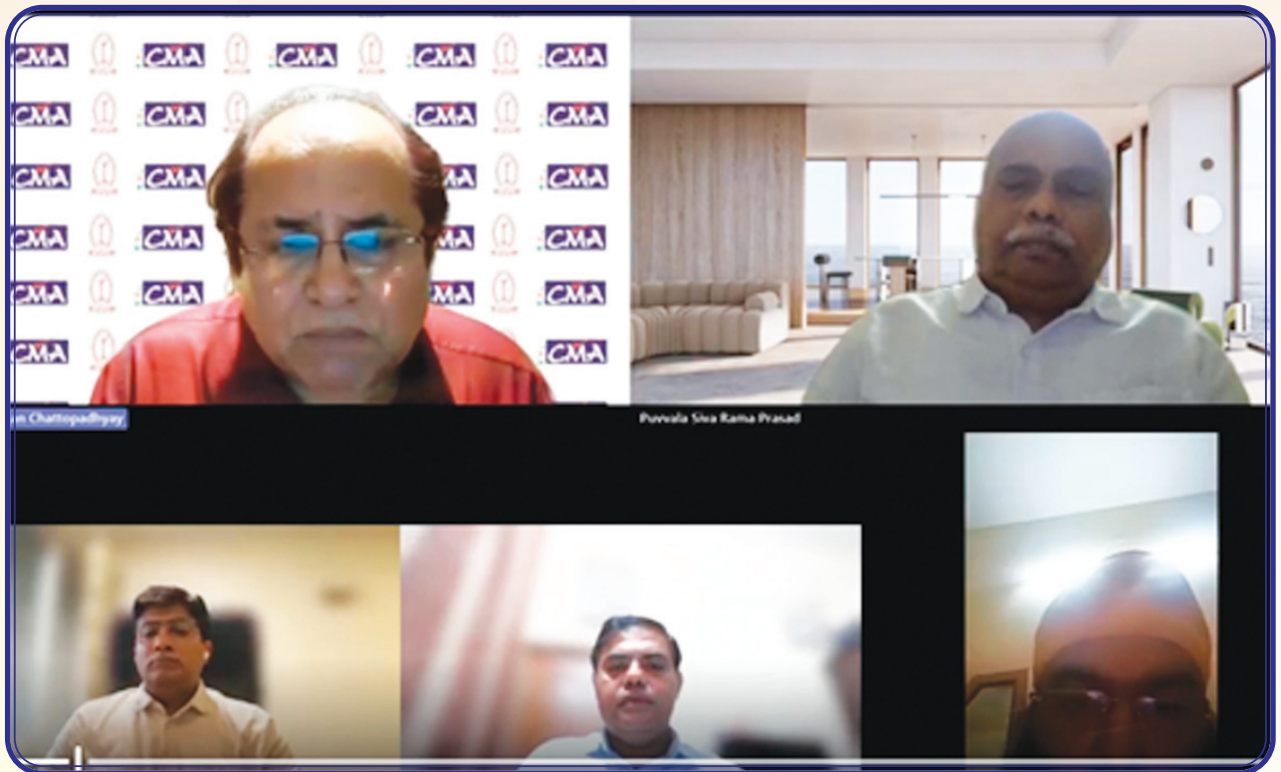
Certificate Course on Concurrent Audit of Banks (12th Batch) Inauguration with CMA Chittaranjan Chattopadhyay, Chairman, BFSIB and ACMB of ICAI on 10th August, 2025.



CMA Chittaranjan Chattopadhyay, Chairman, BFSIB and ACMB of ICAI (extreme right) felicitating Shri Ajay Kumar Srivastava, MD & CEO, Indian Overseas Bank (centre) along with CMA Vijay Kiran Agastya, Chairman SIRC of ICAI (extreme left) on 15th October 2025.



Certificate Course on Credit Management in Banks (12th Batch) Inauguration with Shri B. Sivakumar, CGM, RBI on 21st September, 2025



Certificate Course on Treasury and International Banking (10th Batch) Inauguration with Shri B. S. Venkatesha, DMD-CRO, NaBFID on 12th October, 2025.

ACTIVITIES OF THE BFSI BOARD

ACTIVITIES OF BFSI BOARD, ICAI

The Banking, Financial Services & Insurance Board continued its various activities and initiatives from July to October 2025, a synopsis of which is presented herein under:

A. Webinars

- i. Webinar on Navigate Risks, Seize Opportunities—Identify, Improve, Influence!”

The BFSI Board of ICAI is organized the Webinar on Friday, 4th July 2025, 3:00 p.m. to 5:00 p.m. Shri Swakshar Basu, FCPA and RIMS-CRMP, Associate Vice President at Revantage Asia Pacific, A Blackstone Company is the Speaker.

- ii. Webinar on Role of CMAs in Banking Sector

The BFSI Board of ICAI organized the 1st Webinar on the Banking Month on Thursday, 17th July 2025, 6:30 p.m. to 7:45 p.m. CMA Uday Sankar Majumder, Chief Risk Officer & CGM, Canara Bank was the Speaker.

- iii. Webinar on Role of CMAs in Credit Appraisal of Banks

The BFSI Board of ICAI organized the 2nd webinar on the Banking month on Saturday, 19th July 2025, 4 p.m. to 5:15 p.m. CMA Gopal Singh Gusain, Non-Executive Chairman, Nainital Bank was the Speaker.

- iv. Webinar on Safe Banking in the Digital Age: Protecting Customers from Cyber Threats

The BFSI Board of ICAI organized the 3rd webinar on the Banking month on Sunday, 20th July 2025, 4 p.m. to 5:30 p.m. Shri NDSV Nageswara Rao, Chief General Manager (OPR), State Bank of India was the Speaker.

- v. Webinar on Application of Big Data Analytics and Cloud Computing in Fintech Industry

The BFSI Board of ICAI organized another Webinar on Thursday, 31st July 2025, 4:00 p.m. to 6:00 p.m. CMA Sutapa Ray, SAP certified Senior FICO Consultant is the Speaker.

- vi. Webinar on Infrastructure Project Financing:

The Board organized the webinar on 8th August 2025. Shri C. M. Khurana, Former CGM-CFO, Oriental Bank of Commerce and Former CGM (Credit) IIFCL was the Speaker.

- vii. Webinar on Financial Wellness in the Age of Instant Money

The Board organized the webinar on 28th August 2025. CMA Mohit Nagdev, Certified Financial Planner was the Speaker.

- viii. Webinar on Innovations and Market Dynamics Driving the \$ 5 Trillion Capital Market Evolution

The Board organized the webinar on 6th September 2025. Dr. Pradiptarathi Panda, Assistant Professor, Finance & Accounts, Indian Institute of Management Raipur was the Speaker.

- ix. Webinar on SEBI Circular on Cybersecurity and Cyber Resilience Framework

The Board organized the webinar on 11th September 2025. Dr. Saurabh Maheshwari, Consultant was the Speaker.

- x. Webinar on Securing Gen AI, LLM and Agentic AI

The Board organized the webinar on 18th September 2025. CMA Ravikumar Ramachandran, Practicing Cost Accountant was the Speaker.

- xi. Webinar on CMAs Role in Receivables Audit, Stock Audit and Monitoring of end-use of Funds

The Board organized the webinar on 27th September 2025. Ms. R Sumitra, Credit Management Specialist was the Speaker.

- xii. Webinar on Regulatory Framework in Insurance Sector

The Board organized the webinar on 10th October, 2025. Shri Ramana Rao A., Chief General Manager (GA & HR), Insurance Regulatory and Development Authority of India (IRDAI) was the Speaker.

- xiii. Webinar on from Policy to Profit: How Recent RBI's

Regulatory Ripples Reach MSMEs

The Board organized a Webinar on Monday, 27th October 2025, 4:00 p.m. to 5:30 p.m. on the topic “From Policy to Profit: How Recent RBI’s Regulatory Ripples Reach MSMEs”. CMA Pankaj Jain, Global MSME & Realty Strategist was the Speaker.

B. Certificate Courses

The Certificate Course on Credit Management in Banks (12th Batch) started from 21st September, 2025. Shri Sivakumar Bose, Chief General Manager, Reserve Bank of India inaugurated the course.

The Certificate Course on Concurrent Audit of Banks (12th Batch) concluded on 28th September, 2025.

The Certificate Course on Treasury and International Banking (10th Batch) started from 12th October, 2025. Shri B.S.Venkatasha, Dy.Managing Director, NaBFID inaugurated the course.

The admission window for the above courses is stated as follows:

<https://eicmai.in/OCMAC/BFSI/DelegatesApplicationForm-BFSI.aspx>

C. Seminar

- i. CPE on Fraud and Investigation- Role of Cost and Management Accountants

The Board organized the CPE on 20th September 2025 at CMA Bhawan, J N Bose Auditorium, ICAI. CMA Balbir Singh, General Manager, Punjab National Bank was the Chief Guest and CMA Sanchit Goyal, Assistant General Manager, SEBI. It was an outreach programme of SEBI and the event was attended by members with lot of takeaways on practical case studies of fraud and how to investigate by professionals.

- ii. Seminar on Navigating the Dynamic Regulatory Landscape: Strategic Role of ICAI in association with WIRC,ICAI

The Board organized the CPE on 5th October, 2025 at Goa in association with WIRC,ICAI. Shri Pradeep Ramakrishnan, Executive Director, Department of Capital Markets, IFSCA was the Chief Guest. The Seminar had three technical sessions starting with the Role of Reserve Bank of India in Viksit Bharat 2047 where CMA (Dr.) Kenchappa Balu, Former CGM, Reserve Bank of India was the

speaker. The second session was on the Role of Banking Sector in Viksit Bharat 2047 where CMA Punit Jain, Director, NIBSCOM was the speaker and the last session was on the Role of Capital Markets in Viksit Bharat 2047 where CMA Dhiraj Sachdev, CIO Roha Venture LLP was the speaker.

D. Opportunities for CMAs

- ✳ CMAs are eligible to apply for recruitment of Manager (Credit Analyst) in State Bank of India and Credit Manager in Punjab & Sind Bank.
- ✳ CMAs are eligible to apply for recruitment of Generalist Officers in Scale-II in the Bank of Maharashtra.
- ✳ CMAs are eligible to apply for recruitment of Administrative Officers (Generalists and Specialists), Scale-I in New India Assurance Co. Ltd.

E. Launch of 21st BFSI Chronicle

The 21st BFSI Chronicle was launched on 17th July, 2025 by CMA Uday Sankar Majumder, Chief Risk Officer & CGM, Canara Bank in the 1st webinar of the Banking Month.

F. Release of the Aide Memoire on Infrastructure Financing (3rd revised and enlarged edition)

The Aide Memoire on Infrastructure Financing (3rd revised and enlarged edition) was released on 22nd July, 2025 at the Council Meeting of the Institute. The printed copy for sale would be soon launched by the Department and available for online sale.

G. Master Direction – Business Authorization for Co-operative Banks (Directions), 2025

The Institute provided the inputs to RBI on the draft Master Direction – Business Authorization for Co-operative Banks (Directions), 2025.

H. FIBAC 2025

CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board, ICAI, participated in FIBAC 2025 (FICCI-IBA Banking Conference) held in Mumbai on 25th August 2025. The conference witnessed the presence of eminent luminaries from the banking sector, deliberating on contemporary challenges, innovations, and opportunities in the financial ecosystem. The event generated several insightful takeaways that are expected to guide the future growth and resilience of the Indian banking sector.



भारतीय रिज़र्व बैंक RESERVE BANK OF INDIA

RBI/2025-26/95

DOR.MCS.REC.59/01.01.003/2025-26

October 28, 2025

Reserve Bank of India (Nomination Facility in Deposit Accounts, Safe Deposit Lockers and Articles kept in Safe Custody with the Banks) Directions, 2025

I. Introduction

The nomination facility is intended to facilitate expeditious settlement of claims by banks upon death of a deceased customer and to minimise hardship faced by the family members. The Government of India has notified the [Banking Laws \(Amendment\) Act, 2025](#) which *inter-alia* has amended the Sections 45ZA, 45ZC and 45ZE of the Banking Regulation Act, 1949 (the Act). [The Banking Companies \(Nomination\) Rules, 2025](#) have also been notified which along with amended provisions of the Act shall come into force from November 1, 2025. Accordingly, in order to align the regulatory instructions with the amended provisions of the Banking Regulation Act, 1949 and corresponding Nomination Rules, it has been decided to review the extant instructions on the subject.

II. Preliminary

A. Preamble

2. These Directions are issued to provide regulatory instructions to banks to implement the nomination facility and shall be read with sections 45ZA to 45ZG of the Banking Regulation Act, 1949 (and with section 56 of the Act *ibid* when applied to cooperative banks) and the Nomination Rules framed thereunder.

B. Powers Exercised

3. In exercise of the powers conferred by section 35A of the Banking Regulation Act, 1949 (read with section 56 of the Act *ibid* when applied to cooperative banks), the Reserve Bank of India (hereinafter called the Reserve Bank), being satisfied that it is necessary and expedient in public interest to do so, hereby issues the following Directions.

विनियमन विभाग, केन्द्रीय कार्यालय, 12^{वीं} और 13^{वीं} मंजिल, केन्द्रीय कार्यालय भवन, शाहीद भगत सिंह मार्ग, मुंबई 400001

टेलीफोन /Tel No: 22601000 फैक्स/ Fax No: 022-2270 5670, 2260 5671, 5691 2270, 2260 5692

Department of Regulation, Central Office, 12th & 13th Floor, Central Office Building, Shaheed Bhagat Singh Marg, Mumbai – 400001

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बैंक हिंदी में पत्राचार का स्वागत करता है

Caution: RBI never sends mails, SMSs or makes calls asking for personal information like bank account details, passwords, etc. It never keeps or offers funds to anyone. Please do not respond in any manner to such offers.



C. Short Title

4. These Directions shall be called the Reserve Bank of India (Nomination Facility in Deposit Accounts, Safe Deposit Lockers and Articles kept in Safe Custody with the Banks) Directions, 2025.

D. Effective Date

5. These Directions shall come into force with effect from **November 1, 2025**.

E. Applicability

6. These Directions shall apply to all banks.

F. Definitions

7. In these Directions, unless the context otherwise requires,

(a) '**Act**' refers to the Banking Regulation Act, 1949.

(b) '**Bank**' refers to a banking company, corresponding new bank, State Bank of India, Regional Rural Bank and Cooperative Bank, as defined in the Act.

(c) '**Rules**' refers to the Banking Companies (Nomination) Rules, 2025.

III. Nomination Facility in Deposit Accounts, Safe Deposit Lockers and Articles kept in Safe Custody

G. Nomination Facility

8.(1) A bank shall offer nomination facility in deposit accounts in accordance with the provisions of sections 45ZA, 45ZB and 45ZG of the Act (read with section 56 of the Act when applied to cooperative banks) and the Rules.

(2) A bank shall be guided by the provisions of sections 45ZC to 45ZG of the Act (read with section 56 of the Act when applied to cooperative banks) and the Rules in the matter of nomination in safe deposit lockers and articles kept in safe custody.

Explanation: For the purpose of these Directions, it is clarified that if an individual is keeping an account for his/ her proprietorship business, it will be deemed as that individual's account and the nomination facility shall be offered in such accounts.

H. Option to the customers not to make a nomination

9.(1) At the time of account opening, a bank shall explicitly inform the prospective



customer of the availability and purpose of the nomination facility and offer him/her the option to avail the same. The bank shall also clearly explain to the prospective customer the advantages of the nomination facility, including but not limited to simplification of the claim process in the event of the account holder's demise and facilitation of smooth and prompt transfer of funds to the nominee without legal complications.

(2) If the prospective customer chooses not to avail the nomination facility despite being fully informed, the bank shall proceed to open the deposit account without imposing any restrictions, if otherwise found eligible, after obtaining a written declaration from the individual confirming that he/ she does not require the nomination facility at the time of account opening. If he/she refuses to provide the written declaration, the bank shall record the fact of refusal to submit written confirmation in the account opening records.

(3) Under no circumstances shall a prospective customer be denied or delayed in opening an account solely on the ground of refusal to make a nomination, provided all other requirements for account opening are satisfactorily met.

I. Incidental Matters

10. In case of simultaneous nomination, if any nominee dies prior to receiving the deposit from the bank, the nomination in respect of such nominee alone shall become ineffective. Accordingly, a bank shall settle the claims of the amount of deposit made in favour of such nominee in accordance with provisions applicable for accounts without nominee clause as contained in [Reserve Bank of India \(Settlement of Claims in respect of Deceased Customers of Banks\) Directions, 2025](#) as amended from time to time.

11. A bank cannot claim a valid discharge under the provisions of the Act if payments are made to individuals based on nomination made under any other law for specified purposes.

12. A bank shall have in place appropriate systems and procedures to register in its books the registration, cancellation and variation of the nomination, as per the request of the customers.

13.(1) A bank shall devise proper systems for acknowledging the receipt of the duly completed forms of registration, cancellation and/ or variation of the nomination.



(2) A bank shall verify and ensure that the nomination(s) made by its customers are in accordance with relevant provisions of the Act and the Rules before providing acknowledgement to them.

(3) Such acknowledgement shall be given to the customers within three working days of receiving the forms of registration, cancellation and/ or variation of nomination, irrespective of whether the same is asked for by the customers.

(4) Where a nomination request is found not to be in conformity with the provisions of the Act or the Rules and is consequently rejected, the bank shall inform the customer in writing, clearly indicating the reasons for such rejection, within three working days of the receipt of the request form.

J. Details of nomination and name of nominee in Passbook/ Statement of Account and Term Deposit Receipt (TDR)

14.(1) A bank shall record the status regarding registration of nomination on the face of the passbook/ Statement of Account and TDR, with the legend "Nomination Registered".

(2) A bank shall also indicate the name of the Nominee(s) in the Passbook/ Statement of Accounts and TDR in such cases.

K. Customer guidance and publicity of benefits of nomination

15.(1) A bank shall give wide publicity and provide guidance to deposit account holders, locker hirers and depositors of articles in safe custody on the benefits of the nomination facility. This may include printing compatible messages on cheque book, passbook and other literature reaching the customers as well as launching periodical awareness drives.

(2) A bank shall ensure that the form for opening deposit accounts, hiring safe deposit lockers and depositing articles in safe custody contains space for getting the details of nomination, which also serves the purpose of educating the customers about availability of such facility.

IV. Miscellaneous

L. Repeal Provisions

16.(1) With the issuance of these Directions, the instructions contained in the circulars mentioned in [Annex](#), issued by the Reserve Bank, shall stand repealed from the



effective date of these Directions.

(2) Notwithstanding the repeal provisions, anything done or any action taken under the repealed instructions shall be deemed as valid, so long as they were done or taken in conformity with those instructions.

(Veena Srivastava)
Chief General Manager

**Annex****List of circulars repealed**

Sl. No.	Circular No.	Date	Subject
1	DBOD.No.Leg.BC.37/C.233A-86	March 21, 1986	Banking Laws (Amendment) Act, 1983 - Section 45ZA to 45ZF of the Banking Regulation Act, 1949 and The Banking Companies (Nomination) Rules, 1985 - Nomination Facilities (i) Proof of Death of Depositor and (ii) Claim Format to establish the Identity of the Nominee
2	DBOD.No.Leg.BC.36/C.90(H)(D)-86	March 21, 1986	Banking Companies (Nomination) Rules, 1985
3	DBOD.No.Leg.BC.58.C.233A-86	May 14, 1986	Banking Laws (Amendment) Act, 1983 and Banking Companies (Nomination) Rules, 1985
4	UBD.BR.13/A6-86/87	August 11, 1986	Banking Laws (Amendment) Act, 1983 - Sections 45ZA to 45ZF read with Section 56 of the Banking Regulation Act, 1949 - Co-operative Banks (Nomination) Rules, 1985 - Nomination Facilities
5	DBOD.No.Leg.BC.98/C.90(H)(D)-88	February 25, 1988	Nomination Facilities
6	RPCD.No.RF.BC.110/D.1-87/98	May 26, 1988	Payment of Balance in the Accounts of Deceased Customers to Survivors/ Claimants and Nomination Facilities
7	DBOD.No.Leg.BC.90/C.466(IV)-91	February 28, 1991	Working Group on Customer Service in Banks (Recommendation No. 30) and Popularisation of Nomination Facility
8	UBD.No.POT.19/UB.3 8-92/93	October 06, 1992	Committee on Customer Service in Banks - Implementation of Recommendations
9	RPCD.No.DC.111/07.3 8.01-92/93	May 12, 1993	S.No. 5, 6 and 7 on 'Deposit and Other Accounts - Nomination facilities' in Annexure to the circular on 'Customer Service'
10	UBD.No.POT.65/09.39 .00/93-94	March 7, 1994	Committee on Customer Service in Banks - Implementation of Recommendations of the Goiporia

			Committee - Maintenance of Complaint Book
11	DBOD.No.BC.15/09.08 .004/96-97	February 28, 1997	Banking Laws (Amendment) Act, 1983 and Banking Companies (Nomination) Rules, 1985
12	DBOD.BC.No.59/09.07 .007/98-99	May 28, 1999	Nomination Facility in Deposit Accounts
13	UBD.No.BR.32/16.04. 00/98-99	June 28, 1999	Nomination Facility in Deposit Accounts
14	DBOD.No.Leg.5049/09 .07.005/2006-07	December 4, 2006	Extension of Safe Deposit Locker/ Safe Custody Article Facility and Access to Safe Deposit Lockers/ Return of Safe Custody Articles by Banks
15	DBOD.No.Leg BC.75/ 09.07.005/2006-07	April 5, 2007	Nomination Facility in Single Deposit Accounts
16	RPCD.CO.RF.BC.No.7 0/07.38.01/2006-07	April 12, 2007	Nomination Facility in Single Deposit Accounts
17	RPCD.CO.RRB.BC.No .71/03.05.33/2006-07	April 13, 2007	Nomination Facility in Single Deposit Accounts
18	DBOD.No.Leg.BC.78/0 9.07.005/2006-07	April 17, 2007	Extension of Safe Deposit Locker/ Safe Custody Article Facility and Access to Safe Deposit Lockers/ Return of Safe Custody Articles by Banks
19	UBD.CO.BPD.Cir No.36/ 13.01.000/ 2006-07	April 19, 2007	Nomination Facility in Single Deposit Accounts - UCBs
20	RPCD.CO.RF.BC No.95/07.38.01/2006-07	May 18, 2007	Extension of Safe Deposit Locker/ Safe Custody Article Facility and Access to Safe Deposit Lockers/ Return of Safe Custody Articles by Banks
21	UBD.CO.BPD.No.47/1 2.05.001/2006-07	June 21, 2007	Extension of Safe Deposit Locker/ Safe Custody Article Facility and Access to Safe Deposit Lockers/ Return of Safe Custody Articles by Banks
22	DBOD.No.Leg.BC.114/ 09.07.005/2008-09	March 9, 2009	Banking Companies (Nomination) Rules, 1985 - Acknowledgement of Nomination and Indicating the Name of the Nominee in Pass Books/ Fixed Deposit Receipts
23	UBD.CO.BPD.(PCB).C ir.No.56/09.39.000/200 8-09	March 12, 2009	Co-Operative Banks (Nomination) Rules, 1985- Acknowledgement of Nomination and Indicating the Name of the Nominee in Pass Books/ Fixed Deposit Receipts



24	RPCD.CO.RRB.BC.No .103/03.05.28-A/2008-09	May 13, 2009	Banking Companies (Nomination) Rules, 1985- Acknowledgement 11 of Nomination and indicating the Name of the Nominee in Pass Books/ Fixed Deposit Receipts
25	DBOD.No.Leg.BC.83/0 9.07.005/2010-11	March 30, 2011	The Banking Companies (Nomination) Rules, 1985 - Clarifications
26	DBOD.No.Leg.BC.89/0 9.07.005/2011-12	March 26, 2012	The Banking Companies (Nomination) Rules, 1985 - Clarifications
27	UBD.BPD (PCB) Cir.No. 25/13.01.000/2012-13	December 3, 2012	The Co-operative Banks (Nomination) Rules, 1985 - Clarifications
28	RPCD.RRB.BC.No.51/ 03.05.33/2012-13	December 12, 2012	The Banking Companies (Nomination) Rules, 1985 - Clarifications
29	RPCD.CO.RCB.BC.No .53/07.51.010/2012-13	December 24, 2012	The Co-operative Banks (Nomination) Rules, 1985 - Clarifications
30	RPCD.CO.RCB.BC.No .6335/07.51.010/2012-13	December 24, 2012	The Co-operative Banks (Nomination) Rules, 1985 - Clarifications
31	DOR.LEG.REC/40/09. 07.005/2021-22	August 18, 2021	Paragraph 5.1: Nomination Facility



FINANCIAL SNIPPETS

- ❁ Banks has the freedom to set minimum balance rules as stated by RBI Governor Sanjay Malhotra.
 - ❁ Unified Payments Interface (UPI) transaction volumes surpassed the 20 billion mark for the first time in August 2025, with the total value reaching ₹24.85 lakh crore.
 - ❁ From September 15, NPCI increased UPI transaction limits to ₹5 lakh for several high-value categories, including capital markets, insurance premiums, and credit card bills.
 - ❁ India is set to implement the OECD's Crypto-Asset Reporting Framework from April 1, 2027, which will bring offshore cryptocurrency holdings of its residents under the tax net.
 - ❁ Market regulator SEBI is speeding up the clearance process for Initial Public Offerings (IPOs) and will aim to approve most share sales within three months of filing.
 - ❁ SEBI and the RBI are in advanced discussions to simplify and quicken the entry processes for new foreign investors, aiming to reduce registration time from six months to as little as 30 days.
- PhonePe has received final approval from the RBI to operate as an online payment aggregator, allowing it to scale its network by on boarding more online merchants.
- ❁ The RBI revised digital payment norms, making two-factor authentication mandatory for all transactions above a small-value threshold, effective from April 1, 2026, to enhance security.
 - ❁ Walmart-owned fintech unicorn PhonePe filed confidential draft papers with SEBI for an IPO, planning to raise ₹10,000-12,000 crore via a pure Offer for Sale (OFS).
 - ❁ S&P Global upgraded India's sovereign rating to 'BBB' from 'BBB-' after 18 years, a move expected to significantly boost foreign portfolio and direct investments.
 - ❁ India's outbound investments surged by 67% in FY25, driven by ESG, global tax reforms, and leveraging GIFT City for global expansion strategies.
 - ❁ Gold and silver cemented their status as safe-haven assets by outshining equity markets, with gold prices rallying over 53% amid heightened global uncertainty.
 - ❁ The government plans to use data from e-commerce (Amazon, Flipkart) and OTT platforms for the new CPI series, signalling the integration of FinTech and digital consumption data into national economic and investment planning.
 - ❁ The government has exempted all individual life and health insurance policies from the Goods and Services Tax (GST) starting September 22.
 - ❁ Shri Ajay Seth, Former Secretary of the Department of Economic Affairs, has taken charge as the new chairman of the Insurance Regulatory and Development Authority of India (IRDAI) for a three-year term.
 - ❁ Insurance Amendment Bill, which proposed allowing 100% Foreign Direct Investment (FDI) in the sector, is likely to be introduced in the upcoming winter session of Parliament.
 - ❁ The official website for Bima Sugam, the upcoming digital public infrastructure for insurance, has been launched, marking a step closer to the phased rollout of the unified marketplace.
 - ❁ IRDAI asked the Insurers to conduct second quantitative impact study after implementing the proposed risk based capital norms.
 - ❁ IRDAI is exploring a mutual fund style cap on



insurance commission to rein in excessive pay-outs to distributors.

- ✿ The Government released the draft amendments to the Indian Insurance Companies (Foreign Investment) Rules, 2015 aimed to reduce compliance for foreign investors.
- ✿ LIC has paid RS. 7324.34 crore to the Government of India as dividend for the financial year 2024-25.
- ✿ US imposed a 25% tariff on Indian goods, effective after October 5, putting approximately \$20 billion worth of exports at risk and increasing risk for trade credit and marine insurance.

- ✿ Continued strength in safe-haven assets like gold requires life and non-life insurers to actively review and adjust their large investment portfolio asset allocations.
- ✿ The two-year high expansion in the manufacturing sector is expected to drive increased demand for Commercial Property and Industrial Risk Insurance from new and expanding factory units.
- ✿ The new CPI series incorporating e-commerce and digital transaction data will provide insurers with more accurate metrics for pricing inflation-linked insurance products and evaluating long-term liabilities.



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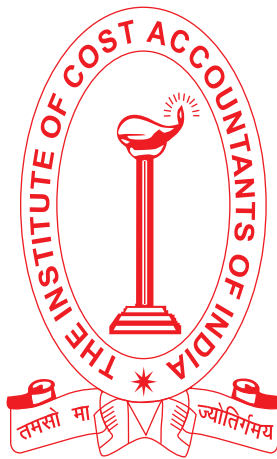
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