



The Evolution of Forensic Accounting in the Age of Digital Innovation

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Abstract – Despite India’s remarkable economic growth, positioning it as one of the fastest-growing major economies globally, the rapid expansion of commercial activities has simultaneously increased its exposure to fraud. The COVID-19 pandemic and the subsequent recovery phase have significantly reshaped the country’s fraud risk landscape, particularly due to accelerated digital transformation. As highlighted in the Financial and Cyber Fraud Survey Report 2024, there has been a substantial rise in fraud incidents impacting businesses across various sectors.

As 2025 progresses, financial crimes continue to evolve, with fraudsters leveraging advanced technologies and exploiting regulatory loopholes to design complex schemes. Major fraud trends reported this year include cyber-attacks, asset misappropriation, and regulatory fraud, with nearly half of the surveyed organizations experiencing one or more fraud incidents in recent times.

In this context, forensic accounting has emerged as a crucial and evolving specialization within the field of accounting and auditing. It involves the systematic examination of financial information to detect, investigate, and prevent financial irregularities and fraudulent activities.

Key Words: Forensic Accounting, Digital Era.

Introduction

Forensic analysis has become crucial for detecting financial crimes such as fraud, extortion, money laundering, and tax evasion in a rapidly evolving world. This type of analysis is also essential for promoting economic development and enhancing public trust in governments. As fraud strategies advance alongside rapid digital innovations, traditional forensic accounting relies on manual data examination and is increasingly inadequate for addressing sophisticated criminal fraud. The rise in cybercrime underscores digital forensics’ need to conduct effective investigations. This study provides an overview of digital forensic accounting, emphasizing the need for forensic accountants to acquire digital forensic skills to conduct thorough investigations. It reviews previous research highlighting the importance of integrating digital technologies

into forensic accounting, stressing that this convergence is crucial for enhancing the detection of financial crimes and cyber fraud. Furthermore, the study outlines the basic concepts of both traditional forensic accounting and digital forensics and presents some digital forensic accounting tools that can be utilized in forensic accounting and computer forensics.

Fraud, characterised by deceit and the intent to illegally gain a financial advantage over individuals or entities, has been a societal issue for over two millennia. From the earliest known insurance scam perpetrated by Greek sea merchants Hegestratos and Zenosthemis in 300 BC to the complex cyber frauds of the digital age, the evolution of fraudulent schemes has mirrored advancements in commerce and technology. Each era has seen its archetypal frauds, from the grandiose sale of the Roman Empire in 193 AD to the modern Ponzi schemes named after Charles Ponzi in the early 20th century. These historical instances illustrate the persistent and evolving threat of fraud, giving rise to several mechanisms to detect and prevent these crimes. Forensic accounting has emerged as one of the mechanisms. It is defined as the application of accounting expertise to investigate financial discrepancies and anomalies in the context of legal standards and to present findings in a manner suitable for judicial review. According to Forensic Accounting and Investigation Standards (FAIS) by ICAI, “Forensic Accounting is the gathering and evaluation of evidence by a Professional to interpret and report findings before a Competent Authority.” The specialisation of the field is that it combines aspects of accounting, auditing, and investigative skills to uncover and analyse financial statements and transactions. The goal is to identify and document financial irregularities and potential fraud. Although implicitly practised for centuries, the concept of forensic accounting gained formal recognition in the 20th century.

Early scholars like Kautilya in ancient India underscored the need for financial scrutiny in his economic treatise, the Arthashastra. However, it was not until the significant corporate collapses and scandals of the 20th century, such as those involving Enron and WorldCom, that forensic accounting was recognised globally as a distinct and essential discipline within the financial community. These scandals exposed severe vulnerabilities in financial reporting and regulatory oversight, catalysing the development of stringent auditing standards and



the formalisation of forensic accounting practices. Today, forensic accounting has evolved beyond tracking down illegal funds and identifying falsifications in financial statements. It now extends to negligence cases, marital disputes, litigation support, and more, enhancing proactive measures that reinforce the financial systems against fraudulent activities.

The past three decades has witnessed high profile financial reporting fraud (FRF) cases. Particularly, In August 2022, BharatPay, a digital financial services provider, experienced a serious data breach exposing the personal data of around 37,000 users. The leaked information included sensitive details such as usernames, hashed passwords, and transaction data from its backend database. The incident, which spanned several years of data, underscores the vulnerabilities in the fintech sector and the critical need for enhanced security measures to protect customer information financial attack the focus on FRF prevention and detection becomes more important as policymakers, regulators, investors and businesses worldwide became concerned about the existence and growth of FRF as well corporate malfeasance and misconduct.

Objective-

- To understand the integration of forensic accounting and management control systems.
- To examine the relationship between forensic accounting and cyber fraud in Fin-tech services.

Research-Focused

With the rise in digital transactions and complex financial systems, India is witnessing an increase in sophisticated fraud activities. Existing accounting frameworks are not fully equipped to detect such evolving threats. Although forensic accounting offers potential solutions, its integration with emerging technologies and its practical implementation remain underexplored. This gap necessitates a focused study on enhancing forensic accounting practices in the digital era.

The importance of forensic accounting in combating financial fraud is increasing due to advancements in technology and the complexity of fraudulent schemes. Even with the progress in traditional techniques, financial fraud is still spreading, revealing the constraints of conventional methods in identifying and stopping illegal activities. This article seeks to tackle numerous crucial challenges encountered by forensic accountants in the present day. The increased complexity and amount of financial transactions have made it harder to detect fraudulent activities with traditional methods. The traditional methods and tools typically used in forensic accounting are no

longer adequate to handle the complexity and size of today's financial systems. This lack of capability requires incorporating advanced data analytics and cyber security to improve the precision and effectiveness of fraud identification.

Areas of Forensic Accounting Practices

When there is a suspicion of any kind of fraud or misconduct, forensic accounting refers to the use of scientific methods to investigate the accounts of any company or individual. The ICAI defines forensic accounting as the use of qualified accountants to get all pertinent evidence in cases involving fraud or misconduct. To locate any pertinent evidence for a possible fraud, the investigating accountants use their expertise in accounting, auditing, and investigation. To determine whether there is any fraud in the company's finances, forensic accounting is typically carried out by an independent auditor or audit firm at the request of the government or the company's management. Forensic accounting is the use of highly-sophisticated accounting techniques to uncover instances of financial irregularities and unscrupulous conduct hidden in complex transactions. While traditional accounting will focus on assessing elements such as business funding and properly conveying financial information to management, the objectives of forensic accounting are entirely different. A forensic accountant will be instructed to carry out an analysis of the flow of funds through an organisation, to determine whether any illegal activity has taken place. This is carried out using a robust investigation process and several important techniques.

The main objectives of forensic accounting are to provide evidence that financial fraud has taken place, and present the results of an investigation in such a way that it can withstand cross-examination in court. On top of proving whether irregularities have occurred, the practice also seeks to identify those involved so legal action can be taken against them.

“Rising Need for Forensic Accounting in India”

India's fast-growing economy and increasing digitalization have significantly expanded the scope of financial transactions, but they have also led to a rise in financial fraud and irregularities. With the growing use of online platforms, digital payments, and complex corporate structures, fraudulent activities such as cyber fraud, money laundering, and asset misappropriation have become more frequent and sophisticated. Traditional accounting and auditing systems are often not sufficient to detect such complex frauds, as they primarily focus on compliance rather than investigation. This has created a strong need for forensic accounting, which combines accounting, auditing, and investigative skills to



identify and prevent financial crimes. Forensic accounting plays a crucial role in uncovering fraud, supporting legal proceedings, and strengthening corporate governance. In India, regulatory bodies, financial institutions, and organizations are increasingly recognizing its importance in ensuring transparency and accountability. Therefore, the rising incidence of financial fraud and the limitations of conventional systems make forensic accounting an essential tool in the modern Indian financial landscape.

1. Rise in Financial Frauds & Scams

India has witnessed multiple large-scale financial frauds like banking scams, corporate fraud, tax evasion, and money laundering and cyber frauds.

Bank NPA's, in March 2025 Bank of India (BoI) declared its exposure to Rolta India Ltd., amounting to Rs 616.30 crore, as fraud.

Corporate misreporting like India's market regulator, Securities and Exchange Board of India (Sebi), has imposed fines totaling ₹35 lakh on two former independent directors of Brightcom Group Ltd (BGL). Between FY15 and FY20, serious accounting irregularities artificially inflated company profits by ₹1,280.06 crore, misleading investors and allowing promoters to sell shares at inflated prices.

cyber enabled frauds The surge in cyber security incidents from 10.29 lakh in 2022 to 22.68 lakh in 2024 reflects the growing scale and complexity of digital threats in India. At the same time, the financial toll is becoming more pronounced, with cyber frauds amounting to ₹36.45 lakh reported on the National Cyber Crime Reporting Portal (NCRP) as of 28 February 2025. While the numbers point to increasing challenges, they also highlight remarkable progress in the nation's detection and reporting mechanisms

So we need strong **Forensic accountants are required to detect, investigate, and prevent such frauds.**

2. Strengthening Corporate Governance

Companies today must follow strict compliance norms under the Companies Act, SEBI Guidelines RBI regulations So Forensic accountants help ensure accuracy of financial statements and prevent manipulation by management.

3. Demand from Law Enforcement & Government Agencies

CBI ED SFIO Income Tax department and Police Cyber cells increasingly require **forensic accounting experts** to analyse complex financial data and track illicit money flows.

4. Growth of Digital Payments & Cybercrime

India is now a global leader in digital payments UPI, fintech. With growth comes rise in digital financial fraud identity theft crypto-related fraud online money laundering .Forensic accounting helps trace digital footprints and cyber transactions.

5. Need for Litigation Support

Courts require expert evidence on financial misstatements shareholder disputes insurance claims Forensic accountants act as **expert witnesses** to support legal proceedings.

6. Increased Expectations from Auditors

As traditional auditors are no longer enough due to various types of frauds. Companies now expect auditors to detect fraud risk manipulated accounts unusual transactions Forensic accounting skills improve the quality of auditing and financial oversight.

7. Supports National Economic Growth

Financial integrity is crucial for attracting foreign investment stabilizing markets and reducing corruption for better economy. Forensic accounting builds a **transparent and trustworthy economic environment.**

Techniques of Forensic Accounting

In our contemporary globalized and technology-driven financial environment, the significance of forensic accounting techniques cannot be emphasized enough. The specialized investigative methodologies and tools also play a central role in upholding financial honesty, revealing concealed fraudulent activities, and provide crucial assistance in legal proceedings. Without any doubt, forensic accounting techniques are indispensable for identifying financial wrongdoing and fraud. Through the application of forensic accounting techniques, forensic accountants can disclose unusual patterns or deviations within financial data. These distinctive indicators often serve as the initial warning signs of potential misconduct, enabling organizations and authorities to take swift action and to prevent from further harm.

The Digital Transformation of Fraud

The shift to digital platforms has created new opportunities for fraudsters. In 2023, the Association of Certified Fraud Examiners (ACFE) reported that over 52% of occupational fraud schemes involved manipulation of electronic records. Common schemes include:

- Payroll Fraud: Ghost employees and inflated overtime via internal HR systems.
- Invoice Fraud: Creating fictitious vendors using dummy IP addresses and VPNs.
- Email Compromise: Manipulating accounts payable through business email scams (BEC).
- Cryptocurrency Laundering: Obscuring transaction trails through privacy coins and tumblers.

The rise of fintech platforms and decentralized finance (DeFi) adds further opacity to tracing financial flows, making the role of forensic accountants more critical and technically demanding:

In Research we discussed about the Core Techniques in Digital Forensic Accounting

S.No.	Technique	Description	Application
1	Benford's Law Analysis	Uses statistical distribution of digits to detect anomalies	Detecting manipulated transaction amounts in general ledgers.
2	Data Mining & Pattern Recognition	Applies machine learning to detect suspicious patterns	Identifying repetitive small transactions used for laundering.
3	Digital Imaging & Metadata Forensics	Examines timestamps, edits, and hidden properties in documents.	Verifying authenticity of scanned contracts and approvals.
4	Blockchain Analysis	Traces cryptocurrency flows across decentralized ledgers.	Locating stolen Bitcoin moved through mixers and exchanges.
5	Keyword Search & Text Mining	Automates scanning of emails and chats for incriminating content.	Flagging phrases like "off the books" or "cash deal" in internal communications.
6	Interviews and Interrogations	effective communication skills are imperative for forensic accountants when conducting interviews and interrogations	Diligent and skilful interviewing often unveils crucial details related to financial misconduct.
7	Fraud Risk Assessment	Construct fraud risk matrices and pinpoint internal control vulnerabilities.	This technique empowers organizations to proactively address potential weaknesses related to financial misconduct, ultimately strengthening their fraud prevention efforts.

Many firms now use forensic accounting dashboards that integrate multiple analytics tools to provide real-time red flags, visualizations, and AI-based scoring of transactions.

The Role of Cyber Forensics

While traditional forensic accounting focuses on financial data, cyber forensics complements it by retrieving deleted files, analysing system logs, and tracking IP addresses. Collaboration between forensic accountants and cyber security experts is essential in incidents involving:

- Business email compromise (BEC)
- Ransom ware attacks demanding payment in crypto
- Insider data theft or intellectual property violations

Digital forensic imaging tools like EnCase and FTK are used to capture evidence from hard drives, cloud servers, and mobile devices without altering the original data—preserving admissibility.

Future: AI, Blockchain, and the Next Phase of Forensic Innovation

The future of forensic accounting is being reshaped by emerging technologies such as Artificial Intelligence (AI) and block chain, which are transforming the way financial fraud is detected and investigated. AI enables forensic accountants to analyse vast volumes of financial data with greater speed and accuracy, identify unusual patterns, and predict potential fraud risks through machine learning algorithms. This enhances proactive fraud detection and reduces reliance on traditional, time-consuming audit methods.

Block chain technology, on the other hand, offers a transparent and immutable ledger system that significantly reduces the risk of data manipulation and financial fraud. Its decentralized nature ensures that all transactions are securely recorded and easily traceable, thereby strengthening audit trails and improving accountability.

The integration of AI and block chain marks the next phase of forensic innovation, where real-time monitoring, automated fraud detection, and enhanced data integrity become standard practices. However, to fully leverage these technologies, forensic professionals must develop new technical competencies and adapt to a rapidly evolving digital landscape. This technological shift will not only improve the effectiveness of forensic investigations but also redefine the future role of forensic accountants in ensuring financial transparency and security.

The forensic accounting profession stands at a crossroads. Future developments will be shaped by:



- AI-Powered Investigations: Natural language processing (NLP) tools scanning millions of emails in minutes.
- Smart Contract Audits: Forensic analysis of DeFi protocols to detect vulnerabilities and exploitation.
- Digital Identity Forensics: Verifying biometrics, geolocation, and device metadata in eKYC frameworks.
- Interoperable Regulatory Platforms: Governments developing shared ledgers for real-time fraud alerts across borders.

With the rise of deep finance complexity and cyber threats, the demand for forensic accounting professionals with technical acumen and investigative instinct is expected to grow significantly redefining the profession from back-office support to strategic first responders.

Conclusion

Forensic science has long been instrumental in uncovering evidence for criminal investigations; however, the rapid advancement of the digital age has introduced complex challenges such as cybercrime and digitally enabled financial fraud. Traditional forensic accounting approaches are increasingly insufficient to address these sophisticated and technology-driven offenses. This has led to the emergence of digital forensic accounting as a specialized field that integrates accounting, auditing, and digital forensic techniques.

By leveraging advanced tools and methodologies, as data analytics, metadata examination, keyword searches, hashing techniques, memory acquisition, disk imaging, data carving, password recovery, and remote data collection and digital forensic accounting enhances the ability to analyse large volumes of data and detect concealed financial irregularities. Research indicates that this integrated approach is highly effective in mitigating cyber fraud and improving the reliability of financial reporting.

As financial crimes continue to grow in complexity, collaboration between cyber security experts and forensic accountants becomes increasingly essential to safeguard digital financial systems. Furthermore, continuous professional development in areas such as cyber security and artificial intelligence is crucial for staying ahead of emerging threats. Promoting certifications like CISSP (Certified Information Systems Security Professional) and CAIP (Certified Artificial Intelligence Practitioner) can help ensure that professionals possess the necessary skills to effectively combat modern financial crimes.

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