NextGen Scientific Publication
American International Journal of Computer Science and Technology
Volume 7 Issue 6, Pg. No. 161- 168, AIJCST-V7I6P116, 2025
https://doi.org/10.63282/3117-5481/AIJCST-V7I6P116

Original Article

Digital Transformation of Financial Auditing Through Automated Evidence Management and Regulatory Compliance

***Dr. Somasundaram Krishnan**
Professor and Principal, Department of Computer Science and Engineering, Sri Muthukumaran Institute of Technology, Chennai, Tamil Nadu, India.

Abstract:

The traditional auditing which was performed on the basis of computerized evidences, smart information processing and technology of compliance with regulations is undergoing transformation to computerization of financial auditing. The traditional approaches to auditing usually include manual records, disjointed records archives, confirmation of time wasted and issues with consistent record keeping of regulations. The present paper suggests the conceptual elaboration of creating the financial auditing, by incorporating it with the automated system of managing its evidence and compliance mechanisms applied. The system has artificial intelligence and robot process automation along with cloud-based document management, blockchain-traceable and regulatory analytics to reinforce the collection and classification, and authentication as well as storage and recovery of audit evidence. It also raises the issue of the involvement of the regulatory requirements in the automated audit work legislations, as a way to ensure compliance management is an ongoing process, risk identification, transparency and accountability. The proposed solution has laid out the interrelationships among the additions of the layers of functions, which involve the acquisition of financial information, evidence collection, analysis of audit and reporting compliance. Incorporate special consideration on information security, data integrity, and maintenance of audit trail, interoperability and human controls. The framework is conceptually learned based on the key aspects in the performance of audit, flexibility of the regulators, transparency of the activity of the framework, effectiveness of the governance in the framework. The article will provide insights on how intelligent automation can impact the quality of an audit, decrease disparate documentation and ensure timely reporting on the claims side by the regulation. It also presents obstacles to the implementation, future research directions to come up with a safe, scalable and explainable digital auditing ecosystem.

Keywords:

Financial Auditing, Digital Transformation, Automated Evidence Management, Regulatory Compliance, Artificial Intelligence, Robotic Process Automation, Audit Analytics.

Article History:

Received: 02.11.2025

Revised: 25.11.2025

Accepted: 06.12.2025

Published: 17.12.2025

Copyright by the Author(s). This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International (CC BY-NC-ND 4.0) License (https://creativecommons.org/licenses/by-sa/4.0/)

1. Introduction

The fast pace of digital technologies development has actually altered the heritage of financial audit offering new possibilities to improve efficiency of provided audit, credence of evidence, adherence to the regulations and disclosure of an organization. Current financial auditing procedures largely depend on reporting and documentation which are normally done manually, use of a spreadsheet, files and periodic check-ups. Such techniques which have proved to support the financial accountability over the decades are facing more constraints in supporting huge financial transactions, splintered informational systems, bureaucratic system structures and relations of business which are ever evolving. Organizations are being overwhelmed by the creation of financial data by enterprise resource planning (ERP), online accountants, cryptocurrency payment and financial service providers and micro-services. In this regard therefore more sophisticated tools are needed to assist the auditors in gathering, processing, verifying, storing and accessing audit evidence. These problems can be solved simultaneously by the digital transformation offered through the incorporation of the use of artificial intelligence (AI), blockchain, robotic process automation (RPA), cloud computing and modern data analytics into the process of a financial audit.

This introduces incredible opportunities in the quality and reliability of financial audits with the increased usage of artificial intelligence and blockchain technology. Qader and Cek [1] explained the influences that blockchain and artificial intelligence have on audit quality and auditing as well as revealed the importance of the new technology in improving any auditing process. Blockchain has distributed, tamper resistant, record keeping and artificial intelligences has automated analytics, abnormal detection and intelligent processing of financial transactions. Their combination can enhance the possible traceability of evidence and limit possible chances of having unauthorized changes. Nevertheless, the issues that accompany the use of technologies are integration of a system, data stewardship, professionalism, and reliability of automated results as well. Based on this, a mixed model ought to be employed to participate in digital audit and deliver a mixture of technology as well as other relevant controls of the internal controls adds to the professional judgment.

On the same note, Equally Vitali and Giuliani [2] researched and talked about the opportunities and threats of the new digital technologies that would be applied in the auditing companies. Specifically, slowing down of automated evidence management is also emerging as a requirement due to the fact that quality of audits does not only rely on access to financial information but also its authenticity, completeness, relevancy and accessibility in the audit process [3-5].

Whatever these changes, a large research question is needed to establish a well-organized methodology to which automated evidence management and compliance with the regulations can be related into the financial audit life cycle. The current technological solutions would tend to accommodate all of the above three approaches and it is unable to put the evidences of governance and compliance appraisal together so that a system can be put into effect. This brings the necessity to have a systematic method that links the financial information fetching, data insights, validation, regulated storing, the mapping and audit reporting of regulations.

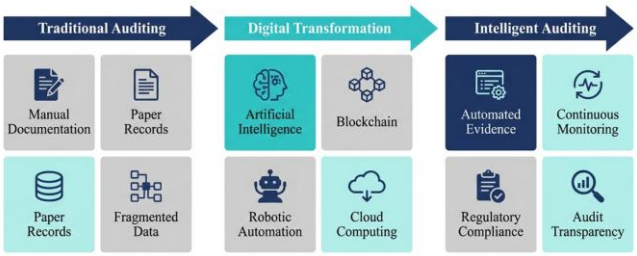


Figure 1. Digital Transformation Landscape of Financial Auditing

Figure 1 illustrates the transition from conventional financial auditing practices towards an integrated digital environment supported by intelligent technologies, automated evidence management, and regulatory compliance

The architecture will be aggregated into functional strata that will consist of the artificial intelligence, robotic process automation, blockchain, traceability, cloud-based evidence repositories and regulatory analytics. It is supposed to be implemented into the conceptually proposed framework: the audit effectiveness, evidence reliability, regulatory flexibility, operational transparency, and

governance effectiveness. The research will give rise to the idea of architecture of a harmonious digital solution of audit which will be applied to other audit related systems and offer them safe and scalable, unencrypted, and open and tech mediated practices of financial confirmation.

2. Related Work

Their work - provides emphasis on the essence of inducting the emanating technologies with congruing systems of governance. Vitali and Giuliani [2] talked of the opportunities of the new digital technologies and the limitation in audit firms. They observed in their work how they can help to amend the traditional audit procedures through enhanced automation, smart processing of data and how they can open up more information.

Their analysis revealed that intelligent auditing, automated verification, and information management with the assistance of blockchain are becoming increasingly popular and will be a chance to build an integrative system of digital auditing.

Eulerich, Masli, Pickerd and Wood [4] had to research the effects of the audit technology on the procedures of audit activities. Their study indicated that technologically motivated process should be applied so as to enhance the cost bases information analysis as well as evaluation processes. They furthered that there should be application of professional judgment in the interpretation of automated output of the audits.

A review of blockchain and artificial intelligence in accounting and auditing was done by Han, Shiwakoti, Jarvis, Mordi and Botchied [5]. They discussed continuous auditing, reporting of the transactions, intelligent financial analysis and discussed the technological, organizational and regulatory barriers to implementation in their article.

Valavala [6] brought in the study on whether audit evidence can be extracted utilizing application logs as a component of financial microservice or not. The work has shown how vital mining, categorization, association and storage records that will be created by the system are in assisting in verifying the financial transactions between the distributed environments.

Fedyk, Hodson, Khimich, and Fedyk [7] discussed how the artificial intelligence could be applied in the auditing processes. The researchers may highlight in their work that it was feasible to apply AI to aid with analytics of financial data analysis, risk evaluation, and describing complex transactions, a factor that indicated that it could be utilized to technology-related auditing.

Lee, Zhang, Liu and Vasarhelyi [8] tested journal entries via the analysis of visual text. Their work demonstrated how the visualization and text analysis could be considered to help the auditors bring to light the ambiguity, as portrayed in the reporting of the transactions and other potential suspicious entries in the financial statement.

Zhang, Thomas and Vasarhelyi [9] came up with an attended process automation framework of auditing. They place rather emphasis on the repetitions of the audit processes being automated without excluding the involvement of human factor in the excellent treatment and expert decision making.

The paper by Sergeant [10] expounds on the issue of blockchain verification of financial auditors, and its shortcomings. The studies point out that blockchain entries per se are not enough to remove the necessity to execute the audit as a professional audit of the based financial statements, of off-chain data and valuation of the transactions is also required.

Werner, Wiese and Maas [11] did studies on process mining applicability in the financial statement auditing. They conducted a research to demonstrate the application of event logs to analyze the sequence of the transactions, identify process deviations and internal control.

Dyball [12] inquired about the impact of adoption of blockchains on audit risk and the audit methods. The article has mentioned how distributed ledger regulates awareness and a reinvention of the customary examination of the evidences within blockchain-companies.

Yoon, Liu, Chiu, and Vasarhelyi [13] came up with a three-layered existing data-level auditing framework. In their study, they have inclined more towards further access of financial information and automated filter in detecting anomalies in their transactions. Rakipi, De Santis and D'Onza [14] assessed the opportunities of deploying the utilization of data analytics in the internal audit functions in the big data setting.

3. Intelligent Evidence-to-Compliance Orchestration Framework for Digital Financial Auditing

Figure 2 presents the proposed Intelligent Evidence-to-Compliance Orchestration Framework, illustrating the interconnected architectural layers responsible for financial data acquisition, automated evidence processing, regulatory assessment, and compliance reporting.



Figure 2. Intelligent Evidence-to-Compliance Orchestration Framework

3.1. Multi-Source Financial Data Acquisition Layer

The initial layer is concerned with obtaining the financial data about the nonhomogeneous organization systems. The use of enterprise resource planning (ERP) system, accounting software, banking interface, and digital payment gateway, procurement software, payroll software and financial micro services have resulted in contemporary businesses producing financial documentation. To collect data about these distributed sources, the proposed layer comes up with standardized data acquisition mechanisms. The centralized auditing environment directly communicates with the operating systems via application programming interfaces (APIs), database associations, and automatic extraction, secure files transfer and database associations. The data obtaining systems involve the origin determination, the time of transaction that occurred, approvals and the original completeness verifications. Such functions can be applied to maintain the bondage between the financial operations of the source systems and initial operations. Standardized data structures are used to transfer the attained information to the next level of processing and minimize inconsistencies that come with the heterogeneous financial records.

3.2. Intelligent Evidence Extraction and Classification Layer

The second layer converts learnt financial data to organized and analyzable audit data. Using AI, optical character recognition (OCR), natural language processing (NLP) and machine learning to extract the contents of the document extracts useful data about invoices, receipts, information on bank statements, contracts, purchase orders, log of transactions and financial report information. RPA facilitates monotonous procedures of gathering documents, field retrieval, matching and enlistment of evidence in documents. All the pieces of evidence are categorized in terms of type of financial, reference to transaction, department of the organization, reporting period and purpose of the audit. Missing records, duplication records, missing transaction records as well as discrepancies on the financial records are also identified by the smart classification system. The metadata generation offers an evidence background, document-type, processing and creation mode circumstances.

3.3. Evidence Validation and Integrity Assurance Layer

They also have considerable skills in their cryptographic hashing ability which can produce unique computer fingerprints of computer-digitized evidence files that can be used in the future to determine whether data stored by the abacus in a computer has been altered. Recordings of tempering, checks and replacement powers in evidences that are tamper evident can be stored on systems that are based on blockchains. The model can also assist in the connection between the original document, the information extracted and output of the validation practices and the audit observation that are performed at a later date. It is interesting that automatic validation

fails to assist in assuring the validity of all their financial statements. It is even possible to audit a complex of exceptions and material exceptions which is subject to professional judgment. Figure 3 depicts the automated financial evidence processing workflow, demonstrating how heterogeneous financial records are transformed into classified, verified, and integrity-protected audit evidence.

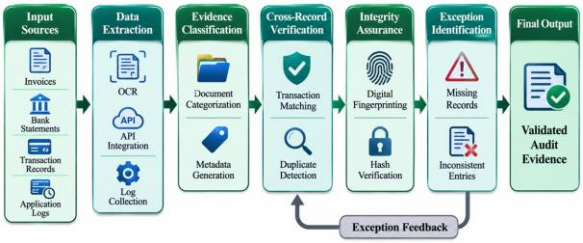


Figure 3. Automated Financial Evidence Processing and Validation Workflow

3.4. Regulatory Intelligence and Compliance Mapping Layer

The fourth layer is connected with the audit evidence of the financial reporting standards, statutory requirements, organizational policies and regulatory requirements. A monolithic regulatory knowledge base is a systematic storing of data on these pertinent compliance regulations, reporting policies, documentation policies and control processes. The section will be based on regulatory analysis on NLP with a view to derive and classify a collection of regulation rule in the regulation literature. The rule based engines are associated with compliance requirements and financial transactions and evidence, audit procedures. The transactions of expenses can be followed up to authorization policies and invoices and payment record and other support compulsory in accordance with the financial documentation like expenditure authorization, Treasure tax etc. In compliance analytics, the lack of supportive documentation, the lack of approvals step sequences, and absence of harmonious reporting classification and possibly discrepant activities are listed. Controlled version management and review can be used to add regulatory updates to the knowledge repository. The layer assists organizations to provide traceable connections among the regulation demands and evidences maintained by an organization to indicate compliance.

3.5. Automated Audit Workflow and Risk Analytics Layer

Risk analytics that are financially oriented make an attempt to examine data to deduce the frequency of unusual transactions, unusual payment modes, and existence of duplicate invoices, abnormal ledger account variants, and now-established organizational controls variation. The priority in the chain of the transactions is also by the agreed risk indices and limits agreed between the auditor and the clients. Audit activities relate to the expert evidence references, users in charge and the time and the results of the review. Figure 4 demonstrates the integration of regulatory intelligence with continuous compliance monitoring, connecting applicable regulatory requirements with financial evidence, automated verification, and risk-based audit review.

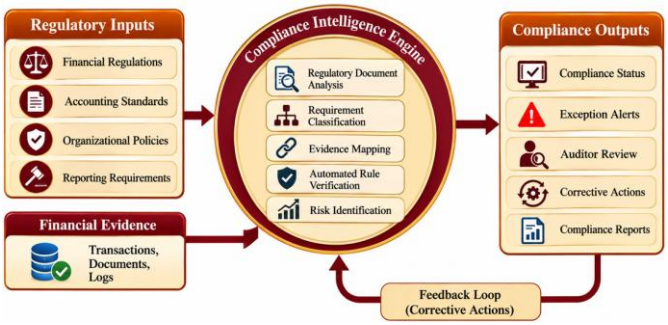


Figure 4. Regulatory Intelligence and Continuous Compliance Monitoring Architecture

3.6. Secure Evidence Repository and Audit Trail Management Layer

Sensitive financial data are safeguarded by use of protective role-based access control, multifactor authentication and encryption and retention policies. Evidence records capture metadata on the history of its source, classification, validation as well as transaction and regulatory relevancy. The repository too reflects the association amid the monetary records, and conformity mappings,

audit observations and ultimate reporting deliverables. These systems will offer the improved information management and introduce the following reviews in the organization and audit review.

3.7. Compliance Reporting and Continuous Improvement Layer

Finally, formats and authenticates findings of evidence and audit which has been verified to format reports and management information about compliance. Dashboards will include an overview of the evidence completeness, the check status and provide a clue on what remedial actions to be taken.

3.8. Cross-Layer Governance and Human Oversight

The governance has the control mechanism as the top layer at all the seven layers. It offers the abilities of authorization of evidence, data proprietorship, control of the models, deciphering of regulations, audit and information safety. Human auditors oversee the process of automating the decisions and execute the task of checking exceptions, passing material findings and assessing the pertinence of the material evidence which has been created.

4. Architectural Appraisal and Qualitative Validation of the Evidence-to-Compliance Framework

4.1. Structural Coherence and Functional Coverage Assessment

It qualitatively examines the proposed Intelligent Evidence-to-Compliance Orchestration Framework its systems, structure and integration in technology and its interaction to the existing finances auditing requirements. These are analyzed by understanding how far the proposed architecture de-facto brings about a significant level of correlation between financial data collecting, smart evidence collecting, checking integrity, regulatory mapping, automatic audit processes, safe evidence storing and regulatory reporting. The operational responsibility of each of the architecture layers is identified and all the layers are interlinked by information continuity to the remaining architecture layers. Interrelated structure minimises the chances of processing information individually, and offers the chance to trace when the financial audit cycle is in progress.

The framework is an evidence management coverage of the key steps in evidence management. The data acquisition layer will take into consideration the financial sources which are heterogeneous and the intelligent extraction layer will aid in converting the non-structured and structured records into the format of evidence that could be searched. Entry Layer Systematizes approvals of papers and transactions. In line with this, regulatory intelligent layer is comprised of financial evidence and other relevant compliance requirements. This type of functional distribution will not overload any element with more functions and achieve an architectural wholeness.

4.2. Technological Integration and Design Trade-Off Analysis

The evidences of the use of artificial intelligence and the robot process automation, blockchain and cloud repositories and regulatory analytics are also taken into account during the architectural review. The technologies possess various competencies which can be integrated in the proposed system. Using the artificial intelligence, RPA will be able to perform smart classification, anomaly detection, regulatory information analysis, and traceability and tamper-evident recordkeeping (by blockchain-secured mechanisms on the basis of repetitive evidence-processing operation). A cloud based system of storing evidence is scalable and can store evidence.

The technologies have severe trade offs in terms of designs. Large automation may be advantageous in terms of consistency of the processing but can arrive at false classifications and inaccurate analysis results, where either or both of source data are not collected. The traceability in blockchain enhances integrity of records, regardless of assuming the authenticity of the underlying financial transactions. At the same point, evidence is easier to access on centralized cloud storage but at the cost of confidentiality, access and control as well as the service provider being unable to be self reliant to the organization. One of the areas of concern of the architecture is flexibility in rules, which needs to be larger.

4.3. Comparative Architectural Alignment and Governance Adequacy

Also associated with the framework are those same well-known properties of technology based auditing such as exhibiting traceability of evidence, automation of operations, performing continuous monitoring, integrating with the regulatory environment, ensuring security and accountability of information. These functions are extended by automated analysis of financial information with

solutions based on data analytics. Combining these concepts offers architecture as presented by blockchain based auditing and aids augmentation of traceability of a transaction and continuous auditing entities encourages, financial monitoring throughout.

The proposed framework is based on these personal capabilities and extends them to incorporate the evidences management and regulatory compliance into an architecture of one building. The peculiarity of it is the unintermediate connection between the financial operations, evidences, and supporting them, validity records, audit results, and reporting conclusions.

The other reason which comes into play in an assessment is the adequacy of government. Nevertheless, its applicability to different organizational setups should be preceded by its practicality being implemented and the constraints of the implementation to be measured in the field.

5. Conclusion and Future Research Directions

Digitizing financial auditing should be holistically carried out, integrating intelligent automation and convincing evidences, and compliance to regulations. This study was able to come up with an Intelligent Evidence-to-Compliance Orchestration Framework that addresses the gaps in the traditional auditing practice. The architecture is connected to artificial intelligence, robot process automation and blockchain-based traceability, cloud-based / (evidence) stores, and the regulatory analytics back on the interconnected layers of architecture. Under its conceptual analysis, it states that it has to have automated evidence gaining, intelligent, classifications, integrity checks, regulatory mapping, and audit procedures driven by risks, safe preservation and compliance reporting features. The proposed structure will utilize the maximum of the number of relationships existing between the financial transactions, documentation and audit and regulatory requirements and finally create a logical history to transparent and responsible audit operations. The significant impact that human controls, information protection, explicability, and professional judgment have on using technology in those huge amounts of financial security is also put to light in the paper. The case studies and organizational application of the framework should be tested in future research by experimenting with various industries, financial information system and regulatory environment to ascertain the scalability of the framework to diverse environments. The further elaborations can be provided on explainable AIs, sharing evidence in a manner that respects privacy, changes automated and interoperable audit platforms are regulated. In theory, the vision implied by the proposed framework can help in the development of safe, scalable and compliance-oriented finances spots, i.e. digital auditing, on a wholesome scale.

References

[1] Qader, K. S., & Cek, K. (2024). Influence of blockchain and artificial intelligence on audit quality: Evidence from Turkey. *Heliyon*, *10*(9), Article e30166. https://doi.org/10.1016/j.heliyon.2024.e30166

[2] Vitali, S., & Giuliani, M. (2024). Emerging digital technologies and auditing firms: Opportunities and challenges. *International Journal of Accounting Information Systems*, *53*, Article 100676. https://doi.org/10.1016/j.accinf.2024.100676

[3] Abu Huson, Y., Sierra-García, L., & García-Benau, M. A. (2024). A bibliometric review of information technology, artificial intelligence, and blockchain on auditing. *Total Quality Management & Business Excellence*, *35*(1–2), 91–113. https://doi.org/10.1080/14783363.2023.2256260

[4] Eulerich, M., Masli, A., Pickerd, J., & Wood, D. A. (2023). The impact of audit technology on audit task outcomes: Evidence for technology-based audit techniques. *Contemporary Accounting Research*, *40*(2), 981–1012. https://doi.org/10.1111/1911-3846.12847

[5] Han, H., Shiwakoti, R. K., Jarvis, R., Mordi, C., & Botchie, D. (2023). Accounting and auditing with blockchain technology and artificial intelligence: A literature review. *International Journal of Accounting Information Systems*, *48*, Article 100598. https://doi.org/10.1016/j.accinf.2022.100598

[6] Valavala, S. K. (2024). From application logs to audit evidence in financial microservices. *International Journal of Research and Applied Innovations*, *7*(4), 11246–11256.

[7] Fedyk, A., Hodson, J., Khimich, N., & Fedyk, T. (2022). Is artificial intelligence improving the audit process? *Review of Accounting Studies*, *27*(3), 938–985. https://doi.org/10.1007/s11142-022-09697-x

[8] Lee, H., Zhang, L., Liu, Q., & Vasarhelyi, M. (2022). Text visual analysis in auditing: Data analytics for journal entries testing. *International Journal of Accounting Information Systems*, *47*, Article 100571. https://doi.org/10.1016/j.accinf.2022.100571

[9] Zhang, C. A., Thomas, C., & Vasarhelyi, M. (2022). Attended process automation in audit: A framework and a demonstration. *Journal of Information Systems*, *36*(2), 101–124. https://doi.org/10.2308/ISYS-2020-073

[10] Sargent, C. S. (2022). Replacing financial audits with blockchain: The verification issue. *Journal of Computer Information Systems*, *62*(6), 1145–1153. https://doi.org/10.1080/08874417.2021.1992805

[11] Werner, M., Wiese, M., & Maas, A. (2021). Embedding process mining into financial statement audits. *International Journal of Accounting Information Systems*, *41*, Article 100514. https://doi.org/10.1016/j.accinf.2021.100514

[12] Dyball, M. C. (2021). The impact of client use of blockchain technology on audit risk and audit approach—An exploratory study. *International Journal of Auditing*, *25*(2), 602–615. https://doi.org/10.1111/ijau.12238
[13] Yoon, K., Liu, Y., Chiu, T., & Vasarhelyi, M. A. (2021). Design and evaluation of an advanced continuous data level auditing system: A three-layer structure. *International Journal of Accounting Information Systems*, *42*, Article 100524. https://doi.org/10.1016/j.accinf.2021.100524
[14] Rakipi, R., De Santis, F., & D'Onza, G. (2021). Correlates of the internal audit function's use of data analytics in the big data era: Global evidence. *Journal of International Accounting, Auditing and Taxation*, *42*, Article 100357. https://doi.org/10.1016/j.intaccaudtax.2020.100357
[15] Ashraf, M., Michas, P. N., & Russomanno, D. (2020). The impact of audit committee information technology expertise on the reliability and timeliness of financial reporting. *The Accounting Review*, *95*(5), 23–56. https://doi.org/10.2308/accr-52622