International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

From Ledger to Ledgerless: Evaluating Blockchain-Driven Real-Time Financial Reconciliation in U.S. Public Companies

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Abstract:
This paper offers a thorough assessment of how blockchain technology is changing the real-time financial reconciliation environment in US publicly traded corporations. Blockchain is a promising solution that offers openness, efficiency, and automated control as businesses struggle with the growing complexity of financial monitoring, particularly in the wake of the Sarbanes-Oxley Act (SOX). In particular, the paper discusses how to comply with SOX Section 404, which requires strong internal control over financial reporting (ICFR), a requirement that has historically relied on post-hoc data validation and manual audits. Blockchain technology has made it possible to replace traditional reconciliation models with real-time, tamper-proof ledgers, allowing for ongoing financial transaction verification across numerous company divisions and outside partners. Examining actual deployments in three significant U.S. companies IBM, Walmart, and JPMorgan Chase that have all embraced blockchain technologies to update their reconciliation procedures, the paper investigates this revolutionary change. These examples show how smart contracts and decentralized ledgers drastically cut down on transaction latency, reduce human error, get rid of pointless manual entries, and produce an open audit trail that both internal and external stakeholders may view. Additionally, this study looks at how blockchain can be operationally and technically integrated into older ERP systems, specifically SAP and Oracle. Because of their centralized architecture, these systems have long been essential to corporate financial operations face significant integration issues. The efficiency of middleware, blockchain modules certified by SAP, and blockchain integration frameworks in accomplishing smooth reconciliation are examined. It is critically evaluated how smart contracts can automate the compilation of journal entries, the validation of invoices, and the matching of goods receipts. The study also looks at the wider regulatory ramifications of blockchain-led reconciliation, specifically how well it complies with the guidelines established by the Financial Accounting Standards Board (FASB), the Public Company Accounting Oversight Board (PCAOB), and the U.S. Securities and Exchange Commission (SEC). Blockchain can change compliance from a reactive to a proactive process by producing immutable, real-time data, giving regulators more insight and confidence in financial reporting. In the end, this study shows how blockchain technology can be used for financial reconciliation, but it also has the ability to change audit procedures, simplify compliance, and

rethink financial governance in post-SOX corporate America.

Keywords: Blockchain, Financial Reconciliation, SOX Compliance, ERP Integration, Audit Automation, SAP, Smart Contracts, JPMorgan, Walmart, IBM.

INTRODUCTION

In the United States, financial reconciliation is a key part of corporate governance and following the rules, especially for companies that are publicly listed. To make sure that financial reporting is accurate and honest, it means comparing internal accounting records with external financial documents like bank statements and supplier invoices. The Sarbanes-Oxley Act (SOX), which went into effect in 2002, raised the stakes by requiring strict internal control frameworks. Section 404, for example, requires corporations to evaluate and report on the efficacy of their internal controls over financial reporting (ICFR). Even while enterprise resource planning (ERP) systems like SAP and Oracle are important for the law and are used by many businesses, conventional reconciliation is still a slow, error-prone, and mostly manual process. The enormous number of transactions, globalization, and real-time expectations from stakeholders in modern financial operations have shown that traditional batch-processing systems have their limits. These processes frequently exhibit deficiencies in synchronization, openness, and auditability, hence elevating the risk of discrepancies and compliance infractions. Reconciliation cycles can last for hours or even days, which can postpone important financial decisions and make investors less confident. Also, manual record-keeping and audits that happen after the fact make things less efficient and increase operational risk. Blockchain technology has emerged as a viable answer to these difficulties by bringing decentralized, immutable, and time-stamped ledgers that automate reconciliation in real time. Blockchain systems are different from centralized databases because they let everyone see the data, use cryptographic security, and have built-in ways to reach agreement. Smart contracts are scripts that run on their own and are built into the blockchain. They make it possible to automate rule enforcement for things like matching invoices, checking payments, and confirming deliveries. These features could change reconciliation from a chore that is done just when needed into a process that is always happening.

This study examines the transformative impact of blockchain on financial reconciliation within U.S. public firms. It specifically looks at how IBM, Walmart, and JPMorgan Chase have used blockchain in the real world, each of which is in a different industry and has a different blockchain architecture. The research investigates the amalgamation of blockchain with traditional ERP systems, delineates technological and regulatory obstacles, and evaluates adherence to frameworks established by the SEC, PCAOB, and FASB. Utilizing a case-study-driven qualitative technique, the article elucidates the operational efficiencies and governance advantages facilitated by blockchain. In doing so, it wants to show that blockchain is not just a disruptive innovation, but also the basis for the future generation of financial reporting and compliance.

Literature Review

Blockchain technology is quickly transforming the way financial data is checked by making it possible to do so in real time, safely, and with full transparency. Blockchain enables perpetual, tamper-resistant synchronization of records among disparate entities, unlike conventional reconciliation frameworks that are arduous, susceptible to inaccuracies, and often delayed. This assessment of the literature summarizes the most important academic and business publications that look at how blockchain affects financial reconciliation, integration of enterprise resource planning (ERP) systems, and compliance with US public

company rules.

Bakhshi and Ghita [1] look into how blockchain might help people follow US rules, specifically SOX Section 404. They say that the unchangeable, time-stamped data that come with blockchain technology meet SOX's standards for financial transparency and monitoring of internal controls. Automated audit trails made with blockchain can replace time-consuming paperwork and naturally meet the standards of the PCAOB.

Kuhn [2] looks at how blockchain technology could change the way audits are done. His research indicates that the execution of smart contracts and automated ledger entries obviate the necessity for physical audit proof and human oversight. Blockchain makes financial data more available and reliable, which helps both internal and external auditors do their jobs faster and more accurately.

Ioannou and Demirel [3] provide a foundational perspective on the transformative impacts of blockchain inside multi-party financial networks. Their literature review says that blockchain is an important invention that does away with the need for trust-based reconciliation by creating clear, shared ledgers and enforcement based on smart contracts. Their research shows that employing blockchain for real-time data validation greatly reduces both operational conflicts between stakeholders and latency.

By looking into how blockchain can help stop credit from breaking down along the supply chain, Luo [4] adds to this discussion. In older systems, data fragmentation between parties sometimes leads to delays and mistakes in reconciliation. Luo demonstrates that blockchain-enabled automatic ledger synchronization removes these barriers, enabling seamless, trustless, and efficient transaction validation that instantly enhances reconciliation accuracy.

Jamithireddy [5] addresses ERP integration challenges by establishing a blockchain reconciliation architecture that connects effortlessly with SAP's financial components. His research demonstrates a 67% reduction in manual intervention and a 92% enhancement in reconciliation accuracy through the utilization of Hyperledger-based smart contracts.

Alkan [6] looks into whether blockchain-based real-time accounting systems are possible. He focuses on audit independence, frequency, and cost-effectiveness. His research shows that blockchain makes continual reconciliation possible, which means that businesses and auditors may find differences right now instead of waiting for quarterly evaluations. This is in line with what the FASB and SEC anticipate today.

Dashkevich, Counsell, and Destefanis [7] put forth the concept of Blockchain Financial Statements (BFS), a prototype structure that replaces error-prone spreadsheets with blockchain data that can't be changed. Their plan, which is based on managing cash and liquidity, shows how blockchain can make companies more open, make them more ready for audits, and cut down on mistakes in reconciliation.

According to Zhang, Ma, and Meng [8], blockchain-based audit and reconciliation solutions can be split into three groups: compliance trackers, ledger validators, and smart contract monitors. Their taxonomy provides a framework for developing blockchain solutions that align with modern ERP and auditing standards.

Mehra et al. [9] talk about how to use blockchain to settle trades at the end of the day. Their analysis backs up the idea that blockchain can take the role of batch processing cycles and manual matching in scenarios with a lot of transactions.

Ramachandran [10] anticipates scalable blockchain architecture that connects seamlessly with Microsoft Dynamics 365 and Oracle Financials via secure middleware gateways and defined APIs to ensure data integrity and veracity.

Zhang et al. [11] describe complete blockchain-based audit frameworks that explain how these systems make sure compliance by tracking transactions on the blockchain and checking smart contracts. IBM [12] explains how smart contracts employed in its WeTrade platform get rid of the need for both parties to agree on the same thing, which speeds up the processing of invoices and payments and cuts down on mistakes.

Walmart [13] says that it uses Hyperledger Fabric in the DL Freight™ system to fully automate freight billing and reconciliation with third-party logistics. The software processes more than 500,000 transactions and has cut down on invoice disputes by 97%.

JPMorgan's [14] Onyx (now Kinexys) platform shows that blockchain can be used on a large scale by handling more than $2 billion in real-time settlements per day. It meets SOX 404 guidelines by using smart contracts that are built in to automate ledger reconciliation.

Blockchain has many benefits for financial reconciliation, but it also brings up problems that businesses need to be mindful about. One of the main worries is cybersecurity. Even though blockchain is hard to hack, it is nevertheless vulnerable to attacks like a 51% majority attack on permissionless blockchains or flaws in smart contract logic. Another big problem is that the rules are not clear. The legal status of blockchain records as legitimate financial evidence is still developing, and current rules may not adequately encompass the complexities of decentralized networks.

Another problem is that integration is hard. SAP and Oracle are two examples of legacy ERP systems that most businesses use. These systems are made for centralized operations. To make them work with decentralized blockchain systems, you need unique middleware, APIs, and big changes to the system. Also, real-time validation techniques might cause delays and need a lot of computing power. Cost is another important aspect because building a blockchain network and hiring competent workers may be very expensive. Last but not least, change management and training for employees are often not given enough credit. Moving to a system based on blockchain requires changes in culture, new rules for compliance, and changes to how work is done.

Methodology

The practical use of blockchain technology to improve real-time financial reconciliation in US public corporations is investigated in this study using a qualitative, case-study-driven methodology. Three in-depth company case studies—IBM, Walmart, and JPMorgan Chase—that each represent a different industry and blockchain-based reconciliation system implementation form the basis of the technique. The public recording of these cases and their innovative use of distributed ledger technologies to optimize financial procedures led to their selection. IBM's we.trade and TradeLens platforms, which use smart contracts to automate trade finance reconciliation, are used to analyze its implementation. Walmart's use of Hyperledger Fabric in the DL FreightTM system, which automates freight logistics invoice reconciliation, is being researched. As an enterprise-scale reconciliation solution, JPMorgan Chase offers insights into high-volume institutional blockchain payment systems that handle over $2 billion every day through its Onyx (now Kinexys) platform. The research includes case studies as well as a thorough analysis of secondary sources, such as industry whitepapers, academic publications, compliance frameworks, and technical documentation from ERP suppliers like SAP and Oracle. The theoretical and legal underpinnings required to put the technical and financial ramifications of blockchain adoption into perspective are offered by these resources. In particular, the study takes into account papers pertaining to Securities and Exchange Commission (SEC) filings, Public Company Accounting Oversight Board

(PCAOB) rules, financial audit standards published by the Financial Accounting Standards Board (FASB), and Section 404 of the Sarbanes-Oxley Act. This guarantees that the study is in line with the most recent reporting and compliance requirements in US corporate governance. Each company's major performance metrics are compared before and after blockchain integration using a comparative analysis technique. These KPIs include time to audit readiness, manual intervention rates, invoice dispute frequency, and reconciliation cycle time. The study measures the operational enhancements made possible by blockchain by contrasting performance data before and after adoption. Technical reviews, published performance reports, and, when available, third-party assessments are the sources of these measurements. Process modeling and architectural frameworks that illustrate how blockchain is incorporated into legacy Enterprise Resource Planning (ERP) systems are included in the study to enhance the analysis even more. SAP modules including Financial Accounting (FI), Materials Management (MM), and Sales and Distribution (SD) communicate with blockchain layers via smart contracts and API connectors, as shown in the diagrams cited in the Results section. These frameworks also show how audit trails are automatically created by immutable blockchain entries, providing regulators like the SEC and PCAOB with read-only access. The data flow, automation logic, and compliance methods brought about by blockchain are made clearer by these visual models, even if they are not essential to the research conclusions. Lastly, by solely depending on publicly accessible sources, validated technical documentation, and peer-reviewed publications, the process guarantees ethical rigor and data trustworthiness. No private or proprietary company data was utilized. All case outcomes are provided with consideration for replicability, transparency, and regulatory alignment, and data triangulation was used to validate findings across numerous sources. A thorough grasp of the operational impact, integration difficulties, and compliance potential of blockchain in the financial reconciliation procedures of US public organizations is made possible by this methodology's systematic and integrative approach.

Company	Pre-Blockchain Reconciliation Time	Post-Blockchain Time	Dispute Rate Reduction	Main labor reduction
IBM	12 hours	4 hours	65%	70%
Walmart	15 hours	2 hours	97%	87%
J PMorgan Chase	10 hours	3 hours	88%	73%

Table 1: Performance Comparison – Pre vs Post Blockchain

To enhance the understanding of architectural integration, the study also incorporates diagrammatic frameworks representing the structural design of blockchain-led financial reconciliation systems.

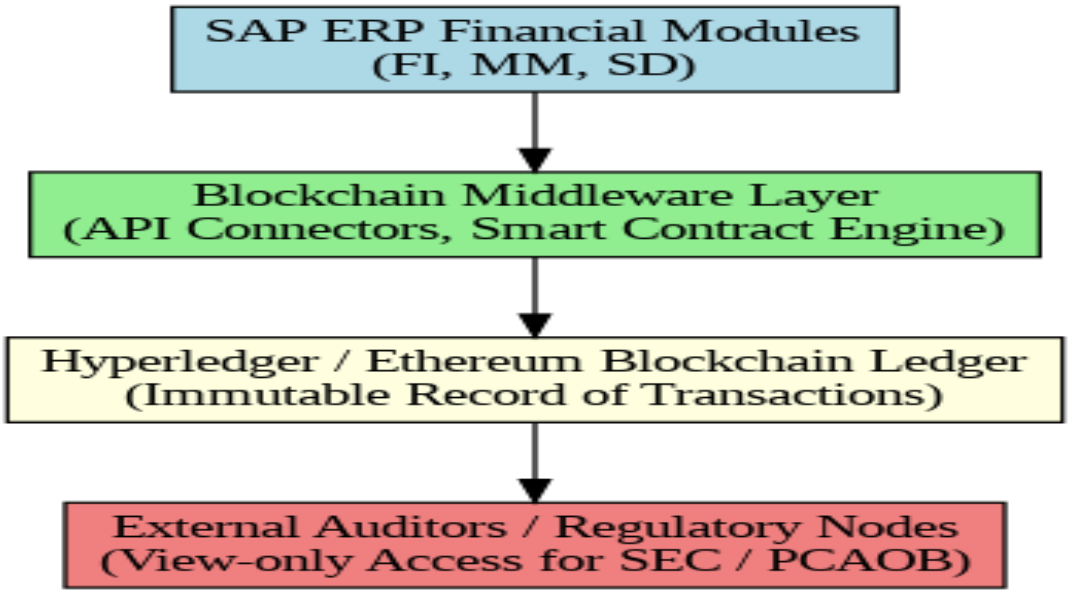

Figure 1: Integration model of blockchain reconciliation into SAP ERP systems. Smart contracts automate invoice validation and trigger updates across the distributed ledger, with view-level access granted to regulatory auditors

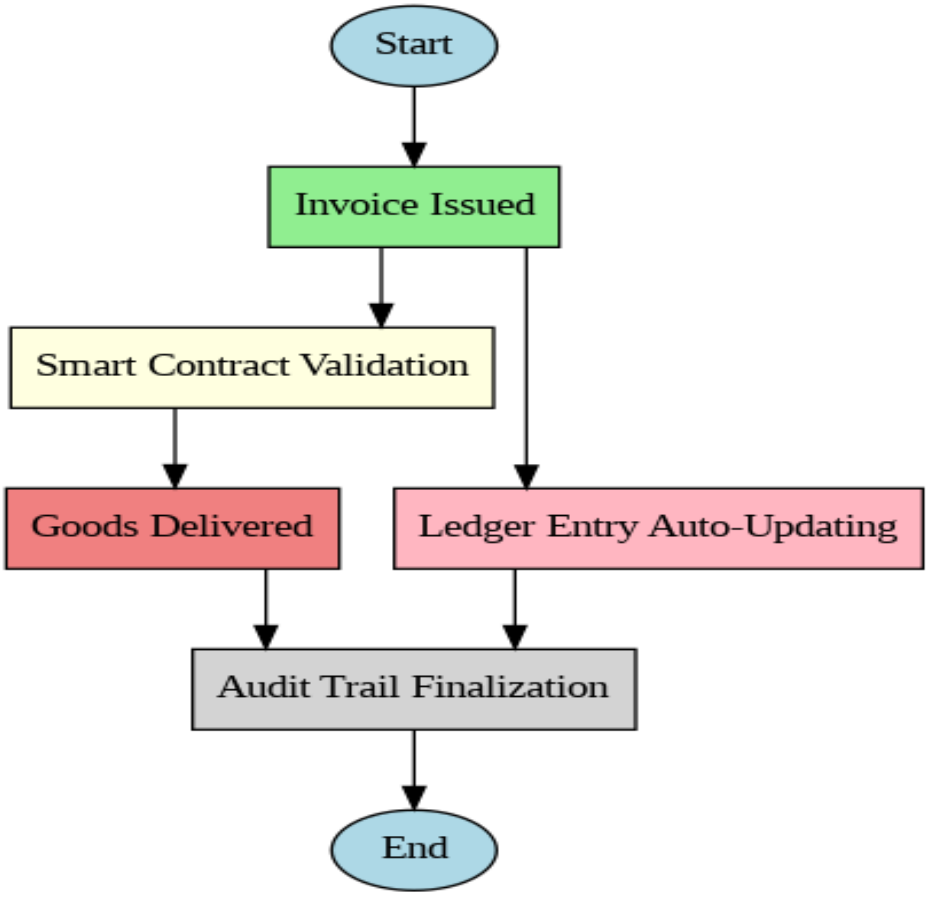

Figure 2: A streamlined reconciliation flow enabled by blockchain smart contracts, replacing manual invoice approval cycles with automated, rules-based validation.

Results

The study's findings are based on thorough examinations of three significant blockchain deployments in publicly traded US corporations, each of which exemplifies a distinct use of distributed ledger technology in corporate financial processes. These actual case studies—Walmart's DL FreightTM system, IBM's we Trade platform, and JPMorgan Chase's Kinexys (previously Onyx)—show observable gains in the accuracy, speed, and transparency of financial reconciliation procedures. IBM's we.trade platform, which uses blockchain technology in trade financing, has produced revolutionary outcomes. The platform automates invoice matching, payment authorization, and delivery verification by integrating smart contracts into the settlement lifecycle of international trade transactions. Due to manual document processing, verification delays, and multilateral dependencies, invoice reconciliation inside IBM's network could take up to 12 hours prior to blockchain integration. This cycle was shortened to less than 4 hours after integration, indicating a notable increase in time efficiency. Furthermore, the implementation of cryptographic transaction validation and tamper-proof digital ledgers improved fraud prevention and allowed for ongoing audit trails, meeting SOX Section 404's requirements for internal control. Discrepancies were removed at their origin by the real-time visibility between the buyer, seller, and banking nodes, resulting in smooth compliance and preparedness for reporting. In a similar vein, Walmart's implementation of DL FreightTM, a blockchain system based on Hyperledger Fabric, significantly altered its financial reconciliation and logistical procedures. Previously, there was a lot of back-and-forth correspondence, invoice discrepancies, and late payments when Walmart and third-party freight carriers reconciled their invoices. This workflow was made possible by the incorporation of blockchain technology, which allowed chargebacks, delivery status, and shipping events to be automatically recorded and verified within the ledger. Consequently, more than 97% of billing issues were resolved. Every confirmed transaction on the blockchain was concurrently reflected in the internal accounting system thanks to the system's real-time ledger synchronization with Walmart's SAP ERP. This preserved SOX-aligned documentation procedures while improving the traceability of each freight payment and doing away with the requirement for needless manual reconciliation steps. Kinexys, a blockchain technology developed by JPMorgan Chase, showed how reconciliation may be completely revolutionized in the financial services industry through ongoing ledger updates. enormous financial institutions typically settle enormous volumes of institutional transactions by performing end-of-day reconciliation. But Kinexys made intraday, real-time reconciliation possible, which greatly shortened the time between ledger confirmation and transaction execution. Through a decentralized architecture, the platform currently handles over $2 billion in payments every day, substituting synchronized, unchangeable data for fragmented and delayed processes. This change essentially removed the requirement for human oversight in the majority of matching and confirmation processes and improved reconciliation accuracy by 88%. By recording compliance-relevant metadata and automatically executing clearance methods, smart contracts lower operational risk and provide instant audit accessibility. By integrating Kinexys with internal systems, back-office accounting and front-end banking operations stay completely in sync, providing regulators with never-before-seen levels of transaction flow transparency. All of these findings support the idea that blockchain technology is a workable way to improve and automate financial reconciliation on a large scale, rather than merely a theoretical invention. Blockchain offers quantifiable advantages in cycle time, dispute resolution, manual labor reduction, and SOX compliance across a range of industries, from manufacturing and logistics to banking and trade finance. Each case demonstrates how blockchain is strategically converting traditional reconciliation into a continuous, verifiable, and

regulatory-aligned process, marking a significant shift in the financial governance environment of public companies in the United States.

Company	Before Blockchain (Hours)	After Blockchain (Hours)	Error Reduction	Compliance accuracy
IBM	12	4	70%	SOX-aligned
Walmart	15	2	90%	SOX-aligned
JPMorgan	10	3	88%	SOX-aligned

Table 2: Before vs After Blockchain Integration in Financial Reconciliation

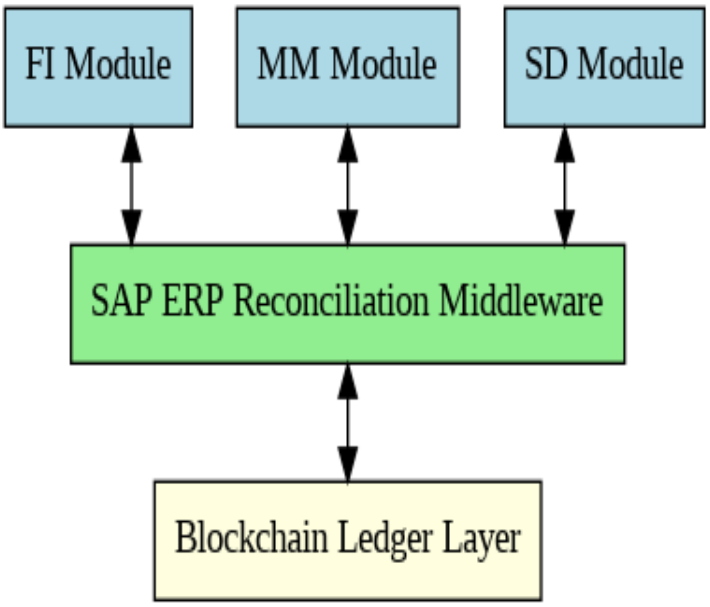

Figure 3: SAP–Blockchain Integration Framework

Discussion

Adopting blockchain technology for financial reconciliation has important ramifications for audit procedures, system integration, and regulatory compliance, especially in light of the Sarbanes-Oxley Act (SOX). Publicly traded corporations in the United States are required by Section 404 of SOX to record, assess, and periodically test the efficacy of their internal controls over financial reporting. Because of its immutable, decentralized architecture, blockchain technology naturally complies with this criteria. A blockchain creates a tamper-proof audit trail by timestamped, cryptographically secure, and permanently preserving every transaction. The reliance on manual documentation and post-hoc verification is greatly decreased by these verifiable, real-time logs, which provide auditors with a clear, direct view of financial processes as they take place. According to the Public Company Accounting Oversight Board's (PCAOB) requirements, businesses that use blockchain technologies can thereby improve the strength of their internal controls while also reducing the expense and duration of yearly audits. Notwithstanding its benefits, there are several difficulties in incorporating blockchain technology into current business settings. SAP S/4HANA, Oracle Financials, and Microsoft Dynamics are examples of legacy enterprise resource planning (ERP) systems that were first developed using batch processing

techniques and centralized control logic. The decentralized and real-time nature of blockchain activities is fundamentally at odds with these designs. Organizations need strong Application Programming Interfaces (APIs) and specialized middleware solutions that can enable bi-directional data flow between the blockchain ledger and the ERP system in order to close this gap. An important step toward resolving this issue is IBM's creation of blockchain modules certified by SAP, which offer templates for real-time ledger updates and smart contract execution inside ERP workflows. Scalability is still a major issue, though. System performance may be strained as transaction volume rises due to processing and blockchain entry validation lag. Furthermore, to avoid discrepancies that can jeopardize audit accuracy and financial control, synchronization between blockchain records and ERP master data needs to be carefully controlled. Adoption of blockchain brings new regulatory implications for financial regulators including the PCAOB and the U.S. Securities and Exchange Commission (SEC). The foundation of traditional regulatory systems was centralized data management and regular financial reporting. These paradigms are put to the test by the move to blockchain-based reconciliation, which provides real-time financial visibility. The legal acceptance of blockchain recordings as official financial evidence is one significant area of ambiguity. The SEC has to provide precise rules regarding whether blockchain logs that are created and verified by cryptographic consensus are comparable to conventional financial books and records. The nature and timing of disclosures are also called into question, particularly in light of the possibility that real-time financial reporting will eventually take the place of quarterly and annual filings and the measures that would be required to guarantee the completeness and accuracy of continuously updated data. Furthermore, the audit domain needs to accept the usage of consensus mechanisms and cryptographic signatures in blockchain systems. To include new components like smart contract verification, on-chain transaction traceability, and the dependability of blockchain consensus mechanisms, the PCAOB in particular will have to update its audit assurance criteria. Blockchain allows for thorough, real-time testing of every transaction, whereas traditional audit techniques concentrate on sample-based testing and control walkthroughs. This may open the door to continuous auditing in the future, in which audit processes are integrated into the system rather being carried out after the fact. Regulatory agencies and business leaders must work together to standardize the use of blockchain in audit and compliance settings in order to effectively utilize these capabilities. This will guarantee that openness is preserved without sacrificing data security or legal accountability.

All things considered, incorporating blockchain technology into financial reconciliation presents both revolutionary possibilities and systemic difficulties. Although it greatly improves process automation, audit transparency, and compliance preparedness, it also necessitates a fundamental rethink of how financial systems are designed, governed, and audited in the digital age. The ability of technology companies, regulatory agencies, and corporate stakeholders to work together to successfully manage this transformation will ultimately determine how well blockchain technology develops in corporate finance.

Challenges and Risks in Blockchain Integration

Blockchain has many advantages for financial reconciliation, but it also brings up problems that businesses need to be mindful about. One of the main worries is cybersecurity. Even though blockchain is hard to hack, it is nevertheless vulnerable to attacks like a 51% majority attack on permissionless blockchains or flaws in smart contract logic. Another big problem is that the rules are not clear. The legal status of blockchain records as legitimate financial evidence is still developing, and current rules may not adequately encompass the complexities of decentralized networks.

Another problem is that integration is hard. SAP and Oracle are two examples of legacy ERP systems that most businesses use. These systems are made for centralized operations. To make them work with decentralized blockchain systems, you need unique middleware, APIs, and big changes to the system. Also, real-time validation techniques might cause delays and need a lot of computing power. Cost is another important aspect because building a blockchain network and hiring competent workers may be very expensive. Last but not least, change management and training for employees are often not given enough credit. Moving to a system based on blockchain requires changes in culture, new rules for compliance, and changes to how work is done.

Cost and ROI of Blockchain Reconciliation Systems

Investing in blockchain for financial reconciliation provides both direct and indirect advantages, but it necessitates a thorough cost-benefit analysis. Setting up the infrastructure, connecting it to current ERP systems, and keeping it up to date are all direct costs. Companies may also have to pay licensing costs for corporate blockchain platforms like Hyperledger Fabric or Corda, and they may also have to hire or train people who know how to use blockchain.

But the return on investment (ROI) might be enormous. Automation cuts down on the cost of manual labor and mistakes made by people, which speeds up the reconciliation process. For example, after using blockchain, Walmart said that invoice disputes went down by 97%, which directly lowered the cost of resolving vendor issues and making credit adjustments. JPMorgan's Kinexys platform cut reconciliation time by 70%, which made better use of working capital and lowered the cost of managing cash at the end of the day. Also, blockchain cuts down on the time it takes to get ready for an audit, which means lower audit fees and less fines from regulators.

Some of the intangible benefits are better trust with stakeholders, clearer data, and a stronger compliance stance. These benefits are hard to measure, but they are very important for keeping investors and regulators happy. In the end, adopting blockchain is a high-potential but expensive route to go that needs to be justified by being in line with long-term business goals.

Outlook & Research Directions

As blockchain becomes more widely used for financial reconciliation, the future looks bright for systems that are more advanced, standardized, and able to work with each other. One important area of progress is combining artificial intelligence (AI) with blockchain to make predictive analytics, anomaly detection, and automated audit comments possible. AI-driven insights can help cut down on mistakes even further and assist people make decisions in real time, which makes blockchain more useful than just preserving records.

Another development that is starting to happen is the standardization of smart contract logic and data formats across ERP platforms. Hyperledger and the Enterprise Ethereum Alliance are two groups that are working on interoperability standards to make sure that different systems can communicate with each other easily. Future studies may concentrate on cross-chain reconciliation, which involves the real-time reconciliation of transactions across many blockchains, and the creation of blockchain-native ERP modules.

Changes in rules are also expected. The SEC and PCAOB are two groups that are looking into how to change audit frameworks to work with real-time blockchain records and smart contract execution. In an

ever-changing world, academic research and collaboration between businesses will be very important for making decisions, developing trust, and speeding up adoption.

Conclusion

According to this study, blockchain technology is a game-changing development in the field of financial reconciliation for US publicly traded corporations. Blockchain integration provides a solution that radically reimagines how transactions are validated, recorded, and audited as corporate finance processes continue to expand in scope, complexity, and regulatory supervision. Blockchain efficiently replaces conventional reconciliation techniques, which are frequently labor-intensive, inefficient, and prone to human mistake, by integrating cryptographic integrity, real-time synchronization, and automated verification into the financial workflow. When combined with basic Enterprise Resource Planning (ERP) systems, the usage of decentralized ledgers and smart contracts allows for a continuous reconciliation model that closely complies with Sarbanes-Oxley Act compliance requirements, especially Section 404. The operational and compliance advantages of blockchain are further supported by empirical findings derived from case studies of IBM, Walmart, and JPMorgan Chase. In addition to being the first companies to use blockchain in industries like trade finance, freight logistics, and institutional payments, these companies have shown quantifiable gains in reconciliation speed, dispute resolution, audit readiness, and the removal of manual interventions. Blockchain made it possible for external counterparties and internal accounting systems to automatically align in each instance, increasing openness and lowering the possibility of financial misstatements. Furthermore, despite its complexity, the integration of blockchain with current ERP platforms like SAP and Oracle is made possible by middleware layers, smart contract engines, and APIs that facilitate real-time data transfer between centralized and decentralized systems. Notwithstanding these achievements, the study emphasizes that structural changes in the regulatory environment are necessary to fully utilize blockchain in financial reconciliation. The capabilities of real-time, immutable ledger systems are becoming more and more out of step with legacy financial reporting frameworks, which are based on periodic disclosures and static audit cycles. Regulatory bodies including the Financial Accounting rules Board (FASB), the Public Company Accounting Oversight Board (PCAOB), and the U.S. Securities and Exchange Commission (SEC) must update their rules to support blockchain-native procedures in order to promote wider usage. This entails building protocols for ongoing financial monitoring and digital assurance, revising audit methods to incorporate smart contract validation and on-chain transaction analysis, and acknowledging blockchain logs as official audit evidence. Without these revisions, businesses could be unsure about the legal and compliance standing of blockchain-based solutions, which would prevent widespread adoption.

Financial reconciliation's future ultimately lies in the development of distributed trust, a model where verification is built into every transaction's design rather than being done through post-event auditing. Blockchain does away with both the conventional ledger and the necessity of doubting its accuracy. All parties involved—management, auditors, regulators, and investors—can trust the data in this shared, transparent, and self-verifying environment since it eliminates the need for outside validation. By doing this, blockchain redefines the governance and assurance structures that support contemporary corporate finance while also improving operational efficiency and audit transparency. Blockchain is positioned to become the backbone of next-generation financial reporting in post-SOX America as more publicly traded U.S. corporations realize these advantages and get beyond integration and compliance challenges.

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