

BLOCKCHAIN TECHNOLOGY IN AUDITING: ENHANCING TRANSPARENCY AND TRUST

The digital transformation of the global economy has led to significant changes in accounting and auditing systems. Traditional audit approaches are increasingly unable to meet the demands for real-time, transparent, and reliable financial information. In this context, blockchain technology is gaining attention as a tool capable of fundamentally transforming audit processes.

The relevance of this study lies in the growing need to enhance trust in financial reporting and reduce the risks of fraud and manipulation. Blockchain technology provides a fundamentally new approach to data recording and verification, which can significantly improve audit efficiency and reliability.

Blockchain is a distributed ledger technology that operates as a decentralized database of transactions shared across multiple network nodes, where each participant maintains an identical copy of the ledger. All updates to the ledger are synchronized in near real time, ensuring data consistency and eliminating the need for a centralized authority.

Each transaction is recorded as a block containing relevant transactional data and is cryptographically linked to the preceding block. This linkage forms a continuous and secure chain of records, known as a blockchain. The integrity of the chain is ensured through cryptographic hashing and digital signatures, which create a transparent, time-stamped, and tamper-resistant record of all transactions.

Such an architecture provides a high level of protection against unauthorized data modification. Any attempt to alter a previously recorded transaction would disrupt the entire chain structure, thereby making manipulation easily detectable. Consequently, blockchain ensures a high degree of data immutability and reliability, significantly reducing the risk of fraud and misrepresentation [3; 5].

Decentralization is a fundamental characteristic of blockchain technology, which enhances system resilience and reduces dependence on intermediaries. Security is achieved through advanced cryptographic mechanisms, including digital signatures that verify the authenticity and integrity of each transaction.

Blockchain technology also enables the implementation of smart contracts – self-executing programs that automate audit procedures, transaction verification, and elements of internal control. This contributes to increased efficiency and accuracy in auditing processes.

So, key characteristics of blockchain include decentralization, transparency, immutability, security, and smart contracts [1].

The integration of blockchain technology into auditing processes opens up new possibilities for improving audit quality and efficiency. One of the most significant innovations is the transition from periodic audits to continuous or real-time auditing.

Blockchain enables auditors to access verified and time-stamped transaction data in real time. This reduces the need for manual data collection and reconciliation, allowing auditors to focus on analytical and judgment-based tasks.

Key applications of blockchain in auditing include: continuous auditing through real-time data access; automated verification of transactions using smart contracts; improved traceability of financial operations; enhanced internal control systems; fraud detection and prevention through transparent transaction records [2].

The application of blockchain in auditing provides several advantages, including:

- reduction of time and labor costs;
- improvement in the accuracy and reliability of audit procedures;
- automation of transaction verification;
- real-time access to financial data;
- minimization of human error;
- simplification of financial statement audits;
- enhancement of transparency and data integrity;
- strengthening stakeholder trust;
- reduction of overall audit costs [3].

Leading international auditing firms, such as Deloitte, PricewaterhouseCoopers, and Ernst & Young, are actively exploring and implementing blockchain-based solutions in their audit practices.

However, the adoption of blockchain in auditing is associated with several challenges, including cybersecurity risks, regulatory uncertainty, integration difficulties, scalability problems, data privacy concerns, and lack of qualified specialists. Additionally, the need to audit smart contracts introduces new complexities, as errors in code can lead to significant financial losses.

Current research efforts are focused on addressing these challenges and maximizing the potential benefits of blockchain technology in auditing practice.

Blockchain technology has the potential to significantly transform auditing by enhancing transparency, reliability, and efficiency. Its key advantages include data immutability, real-time access to information, and automation of audit procedures [4].

However, the successful implementation of blockchain in auditing requires overcoming technological, regulatory, and organizational challenges. Further research should focus on developing standardized approaches, improving legal frameworks, and integrating blockchain with other digital technologies.

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