

Rising Blockchain Accounting: Pioneering Financial Innovation

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Abstract—Blockchain Accounting has become extremely important despite being a polarising technology and an intangible concept to most. Some people adore it, despise it, or even do not understand it. Whatever might be the stance, it is hard to ignore the growing number of organizations adopting blockchain. This has made blockchain accounting a new subject of interest, especially for accounting professionals. Big accounting firms like Deloitte are already training on blockchain accounting. Although mass adoption is not imminent, it is becoming increasingly important to understand how blockchain technology can revolutionize various aspects of the accounting and auditing profession. The main subject of this paper is to provide insight into the awareness of blockchain technology in India to be used by accountants and auditors as an effective tool for fraud detection and fraud prevention.

Index Terms—Blockchain Accounting, Technology, Errors and Frauds, Fraud Detection)

I. INTRODUCTION

A blockchain is a numeric database meant to store messages that were executed between different clients in a network. The database is copied everywhere throughout the internet, with each transaction that has been performed since its inception. All the organizations and individuals who have access to the shared database are called "nodes," and each node has a copy of the database that is the same as all the others. Each block is an operation that is the transfer of charge between the users, like a digital token for the representation of ownership, rights, or obligations. The blockchain is a distributed, decentralized ledger that is asset-based ownership-focused and transfer-oriented. It captures transactional information in a form that is very hard to manipulate. Chronologically sequential blocks of transactional information are linked together, which

lends the technology its unique name. The blockchain database consolidates information relating to organizations and individuals worldwide. In practical applications, various forms of blockchain are currently under development and testing. But most blockchains follow this simple design and methodology. A good blockchain is tamper-proof, running independently of a central authority. Being a decentralized digital ledger running in near real-time, a blockchain has a number of distinct and valuable characteristics that may revolutionize many industries in the long term. The following are explanations of some of these characteristics:

A. Near present reimbursement: A blockchain allows the transactions to settle in real-time and it also helps minimize the risk of non-payment by either party in the transaction.

B. Distributed ledger: The peer-to-peer distributed network holds an open record of transactions. A blockchain is distributed and highly available and holds a secure record of proof that the transaction took place.

C. Irreversibility: A blockchain has a verifiable record of every transaction ever made within that blockchain. This property effectively prevents the possibility of double spending on the item being monitored by the blockchain.

D. Expurgation conflict: The financial incentives in a blockchain's design provide financial benefits for decentralized agents to continue validating new blocks. Thus, a blockchain can continue to expand infinitely without an owner. Additionally, the cost of applying censorship is high.

Blockchain technology can potentially replace the 500-year-old 2-entry bookkeeping method. The improvement of blockchain distributed ledger skills

is most likely to popularize the usage of the triple-entry bookkeeping system. A General Ledger contains all the categories of assets, liabilities, equity, expenses, and income ledgers and thereby constitutes an exhaustive repository of financial transaction documents. In a 2-entry bookkeeping system, there is a concomitant debit and a credit of equal value. But a 3-entry bookkeeping system contains a debit, a credit, and a 3rd entry. The third entry would be recorded on the blockchain. Conventional accountancy consumes much time for all the stakeholders of the supply chain. Organizations keep their ledgers to establish the correctness and compliance of their books of accounts. This too is prone to human error.

II. REVIEW OF LITERATURE

Seshadrinathan, Sujata, and Shalini Chandra (2025): The study explored the effect of trust on blockchain implementation in bookkeeping, highlighting the intervening part of high-tech, managerial, and environmentally friendly factors. Trust significantly influenced embracing intentions, with factors like comparative benefit, ambiguity, top administration backing, and modest pressure playing key roles. While skill gameness and trade-off mate burden had no substantial result, the study's model explained a strong variance, reinforcing trust as a crucial driver of blockchain adoption in accounting.

Singh, Manpreet, et al. (2023): Blockchain is likely to transfigure bookkeeping, auditing, and finance by enhancing accuracy, transparency, and efficiency. While scalability, security, and privacy remain key technical challenges, organizational and human factors also play a crucial role in its adoption. As it matures, accountants' roles will shift from transaction recording to validating smart contracts and financial data. However, limited understanding among professionals hinders broader adoption and innovation in blockchain-based accounting solutions.

Sharma, Asha. (2020): Blockchain accounting is becoming essential for transparency in financial reporting, offering error-free and fraud-resistant ledger management. Despite its complexity, its adoption by the corporate world is growing due to its ability to enhance profitability and productivity. The technology ensures true and fair financial reporting, making it a milestone for the future of finance.

Bansal, Batra, & Jain (2018): Blockchain technology is transforming accounting and auditing by introducing new transaction tools that enhance efficiency and transparency. Like past innovations such as ERP and cloud computing, it will reshape rather than replace the auditing profession. Auditors must adopt a data-centric, forward-looking approach to adapt to this evolving landscape.

Vardia, S; Singh, H (2022): Blockchain know-how can revolutionize bookkeeping and inspecting by ensuring transparency, security, and decentralization. Triple-entry accounting enhances financial accuracy and reduces fraud, while automation allows professionals to focus on strategic decision-making. Real-time data access streamlines auditing, cutting costs and improving efficiency. Additionally, blockchain enables new business models like DAOs, fostering greater transparency and reducing reliance on intermediaries.

Bizarro, Garcia, & Moore (2019): Quantified in their analysis that the Blockchain is an occasion, not a risk and that future book-keeping and inspecting services will virtually positively encompass nearly blockchain reflection. They called a little of the merchandise in the market that shot to assimilate blockchain know-how. Blockchain still is comparatively fresh, and software growth is somewhat vivacious; moreover, they cited some of the products offered in the market that try to integrate blockchain skills.

III. OBJECTIVES OF THE STUDY

1. To emphasize the potential benefits of blockchain accounting.
2. To determine the possible impact of blockchain technology on the bookkeeping and inspecting occupation.
3. To know the respondents' knowledge of blockchain technology.
4. To examine the perception of the respondents on various facets of the use of blockchain technology.

ADVANTAGES OF BLOCKCHAIN TECHNOLOGY IN ACCOUNTING

Blockchains are useful in accounting. In accounting transaction recording, a double entry system is followed, where assets are matched with liabilities and expenses. A debit entry is matched with a

matching credit entry in the ledger. Blockchains facilitate easy maintenance of double entries by companies. Some of the possible advantages of blockchain accounting are given below:

(i) A common ledger for all: Blockchain accounting offers a means through which each member of an organization can feed information straight into the ledger utilizing his computers. Transactions may be initially logged offline and then updated as and when needed. The utilization of a distributed ledger also facilitates members by making it easier for them to access the whole ledger, eliminating the necessity of maintaining information by way of different databases.

(ii) Higher levels of automation and control: Control levels within any accounting system are crucial for granting rights to the operating members of the team. Blockchains enable automatic consensus for transactional records, and this can be controlled by varying levels of nodes. This level of automation enables organizations to define varying levels of control for members of staff, which can further be utilized for allocating workloads to cross-functional teams. Some reconciliation activities can be automated to the fullest in order to avoid manual entries, and other activities can be allowed by active nodes of members of higher authority.

(iii) Long-term operations: Because blockchains are distributed, an accounting system on a blockchain ensures that accounting operations within an organization can continue even upon failure of a number of computers. This is an improvement over a centralized accounting database whose maintenance downtime, disrupts operations continuity.

(iv) Tailored transaction protocols: Most second-generation blockchains provide for the incorporation of computer code into the network protocol, allowing for the automatic performance of actions upon fulfilment of pre-set conditions. This facility is supportive of smart contracts; nevertheless, its accounting application cannot be overlooked. Firms can employ developers to create algorithms that automatically perform accounting tasks. Routine amortization, discounted cash flows, risk evaluations, and inventory levels in some ledgers can be easily automated. Automation is necessary to make business operations easier and enhance organizational effectiveness.

(v) More transparency: Blockchain ledgers are accessible to all in the organization. This transparency coupled with blockchain is beneficial for groups that work in collaborative settings. Entries done by executive personnel can be accessed by board members (and vice versa) in real-time. This may assist managers and their groups in making fast decisions.

(vi) Tamper-resistant ledgers and secure backups: Blockchains organize data in blocks. Each block, along with the data it contains, is timestamped and linked. This makes the blockchain an immutable record of both operational and transactional events. Because the transaction data is spread across numerous computers, it is automatically backed up, frequently with multiple copies being maintained across the network. All transactions and blocks are encrypted, adding further security to the blockchain data. Users, thus, encounter extreme hurdles when attempting to manipulate transaction records stored within the blockchain. Employers can have fewer concerns regarding errors or unauthorized modifications to financial transactions by employees. They can also have assurance regarding backups for their entire accounting database being present.

(vii) Historical data for audit and report purposes: Accounting has largely been equated with audit work. This is mainly because of the nature of work undertaken by accounting firms. Date-stamped information is the best attribute to view old transactions in an audit and identify any discrepancies. Auditors can utilize blockchain ledgers to review the exact dates of different incoming and outgoing payments.

(viii) Scalability: Nearly all central databases would require heavy investments in hardware when scaling up. Such a requirement makes upgrading very expensive to handle increased workloads. Blockchains can, however, be designed to spread workloads across enormous networks, some of which are open. This is known as horizontal scaling, with the network being capable of expanding workload management by servers that execute tasks with high efficiency. The high scalability enables the accounting groups to efficiently capture and close out transactions while keeping customers satisfied.

IV. FUTURE IMPRESSION OF BLOCKCHAIN TECHNOLOGY ON THE BOOK-KEEPING AND INSPECTING OCCUPATIONS

3 primary points of blockchain are capable of distressing the bookkeeping business.

1. Smart contracts: It is a contract that is 1 of several blockchain solicitations that can automate mundane responsibilities in today's bookkeeping. With the aid of it, dealings inevitably execute after specific situations are done. This helps office specialists and administrations in automating tasks such as workforce and settlements. This aids administrations with clerical expenses related to labour-intensive access errors such as office expenses. This application also supports clients and organizations against fraud and scams. A smart contract is 1 of several blockchain bids that can automate mundane tasks in today's accounting. With smart contracts, connections inevitably execute once specific circumstances are seen. This assists book-keeping experts and organizations in automating tasks such as workforce and settlements. It saves administrations on office expenses related to guiding initial errors such as office expenses. Likewise, it helps clients and firms against fraud and scams.

2. Decentralized, Distributed Ledger Technology: It is the 1st mainstream blockchain used where it eliminated the intermediate man when sending currency. One can, for occurrence, send money P2P deprived of the involvement of a bank or credit card processor. While the middleman slows down transactions and charges a fee for their services, they're not so bad. The middleman has a big role to play in safeguarding both parties in the exchange of assets from fraud. Blockchains ensure this security through public witnesses in the form of miners. Miners take the place of a central authority that authenticates transactions. This is all done securely with a consensus protocol or rules based on consensus. Blockchain's decentralized nature also assists in providing proof that a transaction occurred.

3. Easily verifiable financial records: Previously, physical receipts were used to prove that transactions had been completed. Paper receipts were generally hard to forge. The use of digital payment systems has

made digital receipts available, which are easier to forge. Blockchain technology offers a likely effective solution to this problem. The inalterability of blockchain is a result of the fact that, once there is public agreement that a transaction has been verified in the blockchain, it is highly impracticable to change or delete that transaction. If an organization tried to alter the data of a stored transaction in the blockchain, it would mark the muddle worth. It resolves an urgent indicator that suggests that an individual has altered the data. Passwords frequently utilize hashes as well. Essentially, a hash value constitutes a produced string of characters. It safeguards the sensitive information about the transaction and serves as a confirmation that the transaction transpired at a specific moment.



Blockchain accounting is not intended to replace conventional accounting practices or accountants. Instead, its purpose is to improve the workflows of the conventional accounting practice and the record-keeping processes. There will always be situations where conventional accounting will be necessary. The use of blockchain technology in accounting will help accounting firms and professionals, especially auditors, perform business audits. As an important part of auditing is to verify the existence and accuracy of financial records, this innovation would enable accounting professionals to spend more time on other pressing tasks. In addition, blockchain technology will reduce the need to track paper documents, as the blockchain itself can verify many details of a conventional audit.

It has been suggested from time to time that the development of blockchain technology will make a CPA auditor obsolete for financial statement audits.

While confirmation that a transaction did take place is a natural component within a monetary proclamation audit environment, it is only 1 of a number of substantive components. A test is conducted that requires noted transactions to have evidence behind them that is relevant, reliable, unbiased, accurate, and auditable. Being able to point to a verified transaction in an original blockchain would be sufficient and sufficient audit evidence for certain determinations of the validity of transactions (e.g., as evidence that a benefit logged on a blockchain has been conveyed from one participant to another participant). Entry of a transaction as part of a blockchain does not necessarily equate to evidence that is fairly sufficient for all appropriate audit determinations of transaction intrinsic character. That is to say, while a transaction with a record maintained on a blockchain might still be:

1. Unsanctioned, deceitful, or banned
2. Performed among linked entities
3. Connected to a lateral contract that is "off-chain"
4. Misclassified in financial reports

Moreover, most transactions that are reflected in the financial statements have estimated values that are different from their historical costs. Auditors have to take into account and conduct inspection dealings concerning the organization's approximations, regardless of whether the essential communications are reflected in a blockchain.

Massive application of blockchain could allow dominant sites to receive inspection data, and CPA inspectors could establish measures to receive inspection confirmation from blockchains. But level in terms of contacts, it is crucial that the CPA auditor takes into consideration the risk of inaccuracy in the information owing to errors or scams. This situation poses fresh challenges, namely since the blockchain is most likely not to be within the control of the audited entity. Therefore, the CPA inspector would have to pull facts from the blockchain and critically assess its credibility. This procedure might include checking GIRC that applies to the blockchain system. This one may likewise include the CPA inspector comprehending & evaluating the dependability of the agreement etiquette of the particular blockchain. This

evaluation might comprise determining the probability of etiquette manipulation.

As increasing numbers of firms consider employing private or public blockchains, CPA inspectors will have to recognize the probable influence of their inspections as a foundation of accounting statement material. They will have to assess the administration's policies regarding digital possessions and legal responsibility, not yet unswervingly addressed in international financial reporting standards. They will have to determine how to adapt audit procedures to capitalize on the advantages of blockchains as well as mitigate additional risks.

V. ANALYSIS

a. Data Source: The research is founded on main data which was gathered by an estimation survey using a closed-ended organized opinion poll with 10 close-ended questions. The questionnaire was distributed via different social media platforms via mail, WhatsApp, Facebook etc. to researchers and academicians. 50 completed questionnaires were received from different sources. The study time frame was 2025.

b. Methodology: The questions were examined with the aid of descriptive statistics. Data were collected against a five-point Likert scale, with 5 representing strong agreement, 4 agreements, 3 neutralities, 2 disagreements, and 1 strong disagreement, to evaluate perceptions against varied dimensions of blockchain technology. Statistical values such as mean, median, and standard deviation were employed for analysis.

Table No: 1 Likert Scale

Result	Range
Strongly Disagree	1.00-1.80
Disagree	1.81-2.60
Neutral	2.61-3.40
Agree	3.41-4.20
Strongly Agree	4.21-5.00

Table No: 2 For Reference on Benefits of Blockchain Technology in Financial Innovation

Sr. No.	Question	Mean	Median	Standard Deviation
1	Do you believe Blockchain Technology provides a secure record for accounting transactions?	4.1	5	1.266
2	Can Blockchain Accounting help lower bookkeeping costs by reducing the need for manual labor?	4.14	5	1.143
3	Does Blockchain Technology enhance transparency between internal and external stakeholders?	3.98	5	1.22
4	Can Blockchain Accounting minimize errors and fraud in financial records?	4.22	5	1.13
5	Do you think Blockchain Technology can serve as a tool to detect and prevent white-collar crimes?	4.26	5	1.103
6	Can Blockchain Technology facilitate direct transaction access without third-party intervention?	3.44	3.5	1.343
7	Does Blockchain Technology support non-reversible transactions to improve accounting systems?	3.76	4	1.222
8	Will the approval of Block Chain Knowhow transform the roles of accountants & auditors?	4.06	5	1.268
9	Should institutional and regulatory frameworks be established for the implementation of this technology?	2.84	2.5	1.49
10	Is Blockchain Technology suitable for businesses of all sizes?	3.06	3	1.15

Table No: 3 Analysis

Question No.	Decision by Mean	Decision by Median
1	Agree	Strongly Agree
2	Agree	Strongly Agree
3	Agree	Agree
4	Strongly Agree	Strongly Agree
5	Strongly Agree	Strongly Agree
6	Agree	Agree
7	Agree	Agree
8	Agree	Strongly Agree
9	Neutral	Disagree
10	Neutral	Neutral

VI. DISCUSSIONS

1. Block Chain Technology may be regarded as a secure ledger for evidencing accounting transactions.
2. Block Chain Accounting can lower the maintenance cost of books of accounts by

substituting manual labour.

3. Block Chain Technology can enhance the transparency between external and internal stakeholders.
4. Block Chain Accounting can be used to minimize the risk of accounting errors and accounting fraud.
5. Block Chain Accounting can be utilized as a means of reducing the incidence of white-collar crimes within the organization.
6. Block Chain Technology will facilitate direct access to transactions with or without the need for intermediaries which will undoubtedly be a cost and time-saving tool.
7. Blockchain Technology enables non-reversible transactions, enhancing accounting systems and benefiting accountants and auditors.
8. Blockchain Technology is likely to reshape the roles of accountants and auditors, potentially altering the scope of their services in the future.
9. There is no consensus on the need for institutional and regulatory standards on the use of such technology.
10. Acceptance of blockchain technology regardless of the size of the business is questionable since the respondents are uncertain of its acceptability in every business.

VII. CONCLUSION

The influence of blockchain technology on the inspection and pledge occupation remains uncertain, particularly in terms of its speed and extent of adoption. Currently, blockchain is influencing CPA auditors working with organizations that use it for transaction recording, and its implementation is predicted to grow. However, in the near upcoming, blockchain is unlikely to replace financial reporting and auditing, as financial statements include management affirmations and evaluations that cannot be effortlessly captured within a blockchain. Independent audits are essential for maintaining trust in capital markets, with CPA auditors expected to exercise professional scepticism in assessing financial statements for material misstatements. Given the judgment required, blockchain is unlikely to replace financial auditors. Nonetheless, auditors must stay informed about blockchain developments, as they will impact clients' IT systems. The profession must proactively engage with the

opportunities and challenges blockchain presents. A key question for the future is whether blockchain will enhance the role of accounting and auditing or lead to its displacement.

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