

## BLOCKCHAIN'S IMPACT ON AUDITING AND ASSURANCE: EMBRACING THE NEW LANDSCAPE

### Introduction

Only a brief while back, the concept of blockchain remained the domain of a select group of Bitcoin enthusiasts. Today while Bitcoin is fighting its own battles, Blockchain, the technology behind Bitcoin, is expected to be one of the major technological disruptors of our time. Blockchain in its essence is a distributed digital ledger in which transactions are recorded chronologically and publicly.

According to whitepapers released by notable institutions such as The Institute for Development and Research in Banking Technology (IDRBT), established by the Reserve Bank of India (RBI)<sup>1</sup>, and the Blockchain Centre for Excellence, which operates under the National Informatics Centre<sup>2</sup>, the advantages of blockchain technology, including cost savings, efficiency, and transparency, are extolled, albeit with minimal attention to drawbacks. These publications feature numerous use cases for the technology, suggesting a positive outlook on its potential nationwide benefits. In line with this, the Government recently unveiled the National Strategy on Blockchain, and the RBI acknowledges the need to explore blockchain technology to curtail paper currency<sup>3</sup>.

Blockchain technology has the potential to address inefficiencies within the current trade finance system, streamlining processes across various levels, from vendors to customers, and from bankers to manufacturers, spanning micro-enterprises to industrial giants. Many Indian conglomerates have initiated experiments with blockchain technology in areas such as trade finance, supply chain financing, cross-border payments, bill discounting, loyalty programs, and digital identity.

### So, what precisely is blockchain?

It represents a digitized, decentralized, and publicly accessible ledger of all cryptocurrency transactions. It operates as an open and distributed ledger that efficiently records transactions between two parties in a verifiable and immutable manner, all without the need for a central administrator. It consists of an ever-expanding list of records, or blocks, linked to previous blocks and secured through cryptography. Each block typically contains a cryptographic hash of the preceding block, a timestamp, and transaction data. The integrity of blockchain data is highly resistant to modification.

<sup>1</sup> [https://blockchain.gov.in/Documents/BCT\\_2019.pdf](https://blockchain.gov.in/Documents/BCT_2019.pdf)

<sup>2</sup> [https://blockchain.gov.in/Documents/Whitepaper\\_30jan.pdf](https://blockchain.gov.in/Documents/Whitepaper_30jan.pdf)

<sup>3</sup> <https://www.idrbt.ac.in/wp-content/uploads/2022/09/RBI-to-study-Blockchain-technology-to-curtail-paper-currency-Bitcoin.pdf>

In the current landscape, transactions between two parties necessitate a trusted third party, typically a bank. In the blockchain environment, direct interaction between parties eliminates the need for intermediaries. Cryptographic algorithms ensure secure exchanges, establishing a decentralized digital ledger accessible to all participants in the network. This network comprises a chain of computer systems that authenticate transactions before verification and recording. Participants accessing the blockchain via the shared database are referred to as nodes, with each node maintaining an identical copy of the ledger <sup>4</sup>.

### Impacts on auditing profession

The audit process today is usually an annual exercise, mostly because of the time and effort invested in it. Blockchain provides a distributed ledger, thus making it possible to conduct more frequent audits on a quarterly or monthly basis. Auditors will now can get a true and fair picture, and have the time to gauge a deeper understanding of the overall business model, rather than reducing the audit to a tick-box compliance exercise. It is possible that Blockchain could eliminate the need for a financial statement audit by an auditor altogether. However, nevertheless there is always a possibility of human error irrespective of how automated a task is. Therefore, the auditor will still be needed to curb those errors and keep a track of transactions maintained over the blockchain. Blockchain may not allow historical amendments, but subsequent adjustments can be done via a rectification entry.

### Opportunities

- Blockchain's efficiency reduces both time and costs and provides a dependable verification source.
- Sample-based substantive testing redundancy

is eliminated, as blockchain scrutinizes the entire transaction population.

- Blockchain facilitates a near real-time audit environment.
- Transactions settle with remarkable speed, reducing the risk of overlooked transactions.
- Immutability and irreversibility characterize blockchain transactions.
- Parties may involve auditors to validate the accurate implementation of smart contracts.

### Challenges

Despite the transparency, immutability, and irreversibility of blockchain transactions, fraud instances cannot be entirely eradicated. Blockchain's security relies heavily on the integrity of the underlying software. Audit processes necessitate a more in-depth evaluation of operating effectiveness of Information Technology controls such as:

- Risk of ineffective automated controls,
- Risk of feeble internal controls to prevent and detect phishing attack
- Risk of effectiveness of disaster recovery procedures as well as backup and restoration procedures in case private key is lost through a software or hardware malfunction
- New technology - Team require pre-requisite expert level knowledge to gain the comfort with Blockchain technology, which team may not have.
- Experts – Audit team must consist of technical experts, however, as the technology is new, finding a resource is a difficult task
- Understanding Controls – Comprehending and implementing controls in this entirely new technological landscape presents a formidable challenge.

### Conclusion

*Blockchain empowers auditors to conduct real-time audits and provides an audit trail for each transaction, substantially reducing the risk of fraud. However, auditors must equip themselves with the necessary technology and data analytics tools. In Blockchain, auditors will need to draw a line by providing increasingly complex assurance services in more agile business environments and support upcoming digital makeovers. Adapting a forward-thinking audit mindset and acquiring additional expertise and certifications are essential to meet the expectations of stakeholders and business owners in this dynamic environment.*

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<sup>4</sup> World Economic Forum Video — What is Blockchain? <https://www.youtube.com/watch?v=6WG7D47tGb0>