

BLOCKCHAIN- APPLICATION IN ACCOUNTING AND AUDITING

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Abstract: Blockchain is a distributed ledger which can be edited by different persons without putting the sanctity of the database in jeopardy. The paper sheds light on the meaning, characteristics and applications of the technology in different industries. Characteristics such as transparency distributed record keeping and cryptographic record keeping render special importance to this technology and provide basis for its application in different industries. This paper also explains the meaning of 'distributed ledger' and the various applications of the technology in the area of accounting and auditing.

INTRODUCTION

As an emerging technology, blockchain brings with it the beginning of a revolution in keeping record of the financial information. This can have magnificent impact on the accounting practices. Under blockchain technology, participants can maintain and verify records in this common ledger. This can help the accountants by way of cost reduction, simplifying and making easy reconciliation of records without allowing any scope for manipulation in past records. However, it will bring with it a requirement for a new skill set as regards to working on this platform.

OBJECTIVES

- To study the concept of blockchain technology
- To study the characteristics and related process of blockchain
- To study the applications of this technology in finance
- To shed light on how accountants may need to update themselves for application of this technology in their day to day work in the future
- For identification different industries where this technology can be fruitfully employed

LITERATURE REVIEW

In its annual paper, Deloitte Deutschland (2016) stated that blockchain has the potential to be used in all the accounting stages. It emphasizes on the benefits of the technology which can help overcome challenges of accounting and auditing done using traditional methods. It provides reliability since records are protected cryptographically.

Hossein Ammous, et al. (2016) studied the regulatory aspects and security concerns in blockchain technology. He also talked about the regulations put in force by the USA (by the SEC, Commodity Future Trading Commission Internal revenue service and FinCEN) and EU (by European Security Market Authority and UK treasury) in this regard. He also called for effective governance for its successful implementation.

Dr. Saifedean Ammous (2016) studied the role of blockchain technology in the arena of digital currency. He even talked about the application in areas like online payments and record management. He also highlighted the various challenges that the adopters of this technology might face. Some of these challenges include- redundancy, irreversibility of transaction and regulatory compliances.

Lawrence J. Tractman (2016) in his research shed light on the virtual currency segment and the effect of bitcoins in the financial sector. He highlighted that the technology can be applied in the management of the finances of the government, processing of transactions, ledger administration and in clearing and settlement processes in the financial sector. He conjectured that it would take over ten years for full fledged adoption of this technology.

Nadine Ruckeshner (2017) discussed with the help of case studies as to how the frauds take place and can be dealt with regard to internal control system and external control system.

Deloitte Access Economics, et al. (2017) highlighted the concept of distributed ledger and blockchain technology. It also shed light on the costs and benefits of this system.

MEANING OF BLOCKCHAIN

Blockchain is essentially a shared database which is maintained and verified by all the participants in a particular network. It makes sure that the records maintained are permanent, transparent and are not tampered with. Blockchain can be categorized in different types- public blockchain, consortium block chain and private blockchain.

- *Public blockchain*: these are decentralized blockchains wherein anyone can read the transactions, forward them, participate in consensus process and expect their inclusion in the string of blocks. These are secured cryptographically combined with some economic incentives. Example- Bitcoins and Ethereum.
- *Consortium Blockchain*: Here the consensus is by way of pre selected nodes. A node implies a copy of blockchain on any hardware device. These nodes are relied upon to keep a track of cryptocurrency transactions. Example- R3 and Corda.
- *Private Blockchain*: the permission for writing a transaction is centralized. However, the permission for reading them may be public or restricted. Example- Monax and Multichain.

Features of blockchain are as follows:

- **Permanence**: since each user has his copy of ledger, historical transactions cannot be edited without taking the majority users into confidence. Since each participant has the record of the entire ledger, there is transparency in the records.
- **Propagation**: since there are multiple copies of blockchain ledger- each participant has his copy, no central party controls the ledger. Fresh transactions are quickly posted and propagated in the participants' copies.
- **Programmability**: some blockchains permit the storage of programs in addition to the entries. Automatic and self executing entities are made in such systems. This concept is also called smart contracts.

CENTRALIZED VS DECENTRALIZED LEDGER

Under the traditional system of accounting, there is a completely centralized ledger as against the blockchain technology where there is a decentralized ledger. Because of this decentralized system, the cost of managing the transactions is high because each participant has to verify a new transaction before adding it to the ledger. However, in case of centralized ledger the cost of intermediation is really high because of reliance on an intermediary. The transactions in a block chain system are protected cryptographically and are highly secured as compared to traditional system of accounting.

APPLICATION OF BLOCKCHAIN

Blockchain is a way of recording the transactions wherein there is no need to reconcile the transactions and there is no need to pay a central authority for this purpose. Thus, it paves way for self audit in the business concerns. By materializing on the advantages of decentralization costs can be saved by the parties. This technology can be applied in various areas like digital payment system, healthcare, real estate, artificial intelligence, transaction processing, smart contracts, sports, tourism, social inclusion, commercial bank ledger administration and energy and resources.

IMPACT OF BLOCKCHAIN TECHNOLOGY ON AUDITORS AND ACCOUNTANTS

With centralization, the accounting and auditing systems shall be greatly affected. Discrepancies can be corrected in no time on account of this integration and analytics. This will weed out the need for waiting till the end of the accounting period to uncover the anomalies. Irregularities can be detected or weeded out completely in no time. However, this does not imply the complete elimination of human element in accounting and auditing. But the requirements will change, as in the requirement of people who understand and monitor analytical and cognitive processes. Their function shall be changed to the function of overseeing automation of processes and ensuring that the fundamental assumptions remain intact. Effectively, the number of people required for the work shall be reduced. Overall the impact shall be positive.

IMPACT OF BLOCKCHAIN ON ACCOUNTING PRACTICES

By reduction in the operational costs and provision of certainty of the records kept, accounting will be done efficiently in the organizations. There shall be greater transparency and lesser frauds. The accountants shall be relieved from the process of

maintenance of records and shall have greater time on their disposal for quality tasks. The requirement for tasks like technological advisory shall be on a rise.

IMPACT OF BLOCKCHAIN ON THE AUDITING INDUSTRY

External auditing shall be revolutionized since the requirement of ascertaining the authenticity won't be there. So the auditors can make better use of their time and resources. They shall work on areas which require value judgment and skill on their part. By providing read only access to various parties, the process of auditing can become more secure, more continuous and more automated.

The governing body of auditors would require a lot of efforts to explain and lay down the rules in this area. Communicating it to different parties and explaining them the operational requirements and crux of the system shall be the added responsibility of the body in case this is adopted.

INDUSTRIES THAT COULD EXPERIENCE DISRUPTION ON ACCOUNT OF ADOPTION OF BLOCKCHAIN TECHNOLOGY

Healthcare and medicine: by maintaining accurate records using private blockchain technology, there shall be better administration in this field and there shall be no scope of tampering and unethical manipulation.

Human resources: by using database maintained using blockchain, the authenticity of data can be verified by the prospective employer. Thus, it would simplify the process of verification for him.

Politics: the entire process of elections from voter identification to casting of votes to the process of counting of polled votes can be done without any fraud. The security feature of this technology shall help in maintaining trust in the fairness of conduct.

Entertainment: by listening to music stored on blockchain technology and assessing other content stored there, the hassles of licensing can be done away with.

Energy and resources: the concept of digital assets can be merged with this energy sector to gain from the trading of surplus energy.

Public sector: blockchain technology can be used in various government schemes and records for fraud free planning and implementation.

Financial services: the transfer of funds can be done more quickly and efficiently. This will pave way for better financial climate.

CONCLUSION

In the event where the parties do not have trust on each other and they may not like to involve an intermediary, this technology can revolutionize the system. There are a plethora of areas where this technology can be successfully adopted. Talking specifically about the accounting and auditing industry, this technology shall call for a revision in the skill set of the accountants and auditors. Overall the impact shall be positive. The conventional tasks shall become obsolete paving way for a new era.

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