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The Distributed Ledger Technology : A Futuristic Accounting

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Abstract

The future of accounting profession, the Automation in accounting, the emphasis on professional development in technology and soft skills, the workplace flexibility & the accounting firms start hiring for roles that have not been typical. (Future of Jobs Report ,2018). The technology-based accounting practices, allows for a distributed database that holds a growing number of records. The objectives of this study are to explorer the future of accounting practices, understand the blockchain technology and its working in accounting practices and identify the opportunities and challenges of the distributed ledger practices. For the completion of research work secondary data is used.

Keywords: Accounting, Artificial Intelligence, Machine Learning, Blockchain

Introduction

The future of accounting profession, the Automation in accounting, the emphasis on professional development in technology and soft skills, the workplace flexibility & the accounting firms start hiring for roles that have not been typical. (Future of Jobs Report ,2018). Accounting has evolved with time, technology and business needs. In this technological era accounting has also got in shape which got converted it into machine and technological based. The involvement of technology has made accounting easier. The Future accounting practitioner will primarily use computing power, so future accounting people will need to change their mindset and develop advanced computer skills to complement the work

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of artificial intelligence (AI), and machine learning systems. The future outlook of accountancy will be completely based on information technology. The AI, the capacity of machines and software to exhibit or imitate a sense of cognitive intelligence. The term 'machine learning' is coined (Arthur Samuel, 1959), machine learning is the field of computer science is considered a leader in artificial intelligence, giving computers the ability to learn without being explicitly programmed. Adopting AI tools in the field of accounting and finance will enable in task automation and improving analytical capabilities in comparison to human as well as previously used obsolete technologies. (Anshu Gupta,2022).

- Automation Accounting
- Cloud Accounting
- Blockchain Technology
- Data Analytics
- Outsourcing Accounting

Automation of Accounting is simply depicting no further manual practice of accounting work i.e., data entry into a computer, no manually further reconciling of the business bank record, computer base bills drawing, use of electronic spreadsheet and computerised based vouching and verification etc.

Cloud accounting means that your accounting software is hosted on a remote server. Cloud accounting software is similar to traditional on-premises or self-installed accounting software, but similar to the SaaS (software as a service) business model, only the accounting software is hosted on remote servers. The accounting in India is increasingly embracing newer technologies. Businesses are now realising the value of cloud accounting as a front-end technology that they had previously overlooked (Anshu Gupta,2022).

Blockchain technology, is a distributed database that holds a growing number of records. Instead of existing in one place, the ledger is continually updated and synchronized across multiple computers in a network. The tamper resistant digital ledgers implemented in a distributed fashion (i.e., without a central repository) and usually without a central authority (i.e., a bank, company, or government) (Blockchain Technology Overview,2018)

Data Analytics, the machine learning patterns can process and validate data, find anomalies, and produce a list of outliers for review by validators. Instead of spending most of their time

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reviewing data, auditors can apply their skills to investigate and infer patterns and reasons for anomalies.

Outsourcing Accounting is a service that provides businesses with a complete accounting experience. The accounting department handles day-to-day transaction coding, accounts payable and receivable, payroll, financial reporting, and many other services.

Objectives of the Study

- To explorer the future of accounting practices.
- To understand the blockchain technology and its working in accounting practices.
- To identify the opportunities and challenges of the distributed ledger practices.

Literature Review

"Technical expertise and ethics are and will remain vital; over the next decade some technical knowledge and skills will increase in value, others will decrease, and new knowledge and skills will be required" (Professional accountants- the future: Drivers of change and future skills, ACCA,2016). Despite these developments, the 21st-century management accountant still faces challenges because of the changing practices in the industry. The current accounting industry standards require one to be a hybrid accountant rather than being the conventional one with limited skills (Zainuddin & Sulaiman, 2016). The technology is determining the future of accounting by influencing the types of jobs that become available. As sophisticated systems perform repetitive tasks, humans become more involved in analysis and become the critical link between data and customers. Technology will continue to influence the role of accountants and the demand for accountants in the future." The Future of Accounting: Demand and Evolving Technology. The technology has made accounting simpler and more trusted, and accountants that are more qualified are now sought-after in the industry. While these developments are positive, accountants are expected to improve their knowledge and skills to use these tools because developments that are more robust are expected in the future to transfer the industry further. Premium Papers. (2022, April 18). There are many different implementations of blockchain, and it will likely be some time before the academic, business, and technology communities agree on a single, definitive version of the technology (Sheldon, 2019). Blockchain technology, on the other hand, allows

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for a distributed database that holds a growing number of records. Instead of existing in one place, the ledger is continually updated and synchronized across multiple computers in a network. (KPMG,2019)

Methodology

This study is based on descriptive research for developing better insight on the aforesaid topic. Secondary data has been used for the completion of this research work, which is extracted from various websites, journals, research articles, publications, accounting websites directly or indirectly related to future of accounting.

Blockchain

"A distributed database that maintains a continuously growing list of data records that are hardened against tampering and revision, even by operators of the data store's nodes." Fanning and Centers (2016, p. 53). Therefore, as a decentralised public ledger, blockchain might potentially serve as a secure accounting information system. In conventional accounting practices uses centralised database system i.e., Single Authority. This technology-based accounting practices, allows for a distributed database that holds a growing number of records. Conventional practice use to maintain ledger in one place but in blockchain, the ledger is updated frequently and synchronized across computers connected in network. Authorized participants in the network can therefore see the entire ledger without relying on intermediaries or single institutions. In blockchain, the transaction verification process is not centralized. Rather, the blockchain is immune to point-of-failure events, as every computer in the network is involved. Similarly, individuals cannot collude to override controls or fraudulently alter or delete official accounting records. (Wang and Kogan, 2018). This technology became popular since 2009 launch of Bitcoin network i.e., cryptocurrencies. In Bitcoin, and similar systems, the transfer of digital information that represents electronic cash takes place in a distributed system.

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Blockchain: Its Basic Characteristic

Ledger	It appends ledger to provide a complete transaction history. In conventional databases, transactions and values are not overwritten.
Secure	This technology is cryptographically secure, ensuring that the data contained in the ledger has not been tampered with and that the data in the ledger is verifiable.
Shared	A ledger is shared multiple participants and creates transparency regarding node participants in the blockchain network.
Distributed	Blockchain can be decentralized. This allows you to scale the number of nodes in your blockchain network to be more resilient to attacks by malicious actors. Increasing the number of nodes makes it less likely that a malicious person will influence the consensus protocol used by the blockchain.

Blockchain: Its Terminology

Blockchain: It is actual ledger

Blockchain technology: Term to describe technology in its most general form

Blockchain network: Networks that use blockchain

Blockchain implementation: A specific blockchain

Blockchain User: Individual, Government, Business Centre etc.

Node – An individual system, connected through network

- **Full node**: A node that stores the entire blockchain, ensures about the validity of transactions.
- **Publishing node:** A full node that also publishes new blocks
- **Lightweight node:** A node that does not store or maintain a copy of the blockchain and must pass their transactions to full nodes

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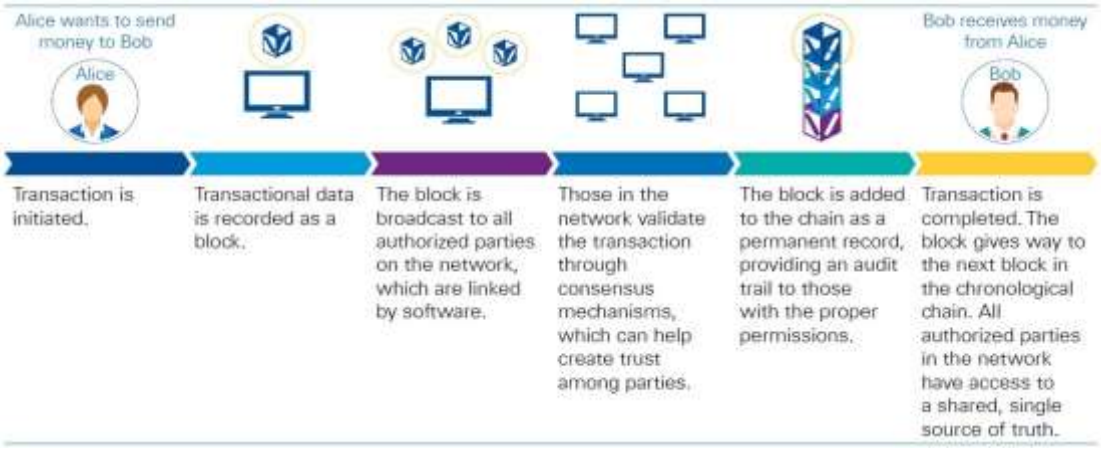
Working of Blockchain



Source: Blockchain and the future of finance, 2019 KPMG LLP

Futuristic Accounting: Qualitative and Quantitative Opportunities

Transparency and Efficiency: This technology has given effectiveness to record keeping along with transparent data management, it is single source where all detail can be accessed. Just a single ledger that synchronized across computers, it eliminates errors and reconciliations.

Data Integrity: The absolute records visible to all parties, blockchain can improve data accuracy and security, reduce the risk of fraud, and demonstrate compliance through audit trails.

Quick Processing: As it is integrated system quick access of data which lead accurate repository of customer information, which can be accessed by all parties in the network.

Cost Control: It has the potential to reduce some transaction charges by decreasing dependency on third parties and free up capital flow as managed fund purchases are made in real time.

Real-time settlement: It allows transactions to be settled in earliest real time, reducing the risk of non-payment by trading parties.

The Distributed ledger: A decentralized peer-to-peer network maintains a published history of transactions. Blockchain is decentralized, highly available, and maintains a secure record of proof that a transaction took place.

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The benefit of accessing this technology is that once a transaction is approved by a node in the network, it cannot be undone or reordered. The immutability of transactions is essential to the integrity of the blockchain, ensuring that all parties have accurate and identical records. Since blockchain is a distributed system, changes to the ledger are transparent to all members of the network.

Drawbacks Blockchain Technology

Distributed Computing System

As this depends on the Node and it determines blockchain quality. This means that the network is not a distributed computing system that does not rely on node participation. In contrast, distributed computing systems work by validating transactions according to rules, recording transactions, and reliably maintaining a transaction history for each transaction. Each of these actions resembles a blockchain action, but each lacks synergy, mutual support, and parallelism. Clearly, blockchain can be a decentralized network, but it lacks the features that make distributed computing systems so beneficial for business.

Proof-of-Work

It uses a proof-of-work consensus algorithm that relies on miners doing the hard work. Due to their high energy consumption, these complex math problems are not ideal for the real world.

Immutability of Data

The entity which holds more than 50% of **its nodes,** which making it vulnerable. Once recorded data cannot be deleted.

The battle between cost and implementation

The implementing blockchain technology is required enormous and cost. Most blockchain solutions, including Hyperledger, are open source, need significant investment for organizations and other costs associated with hiring developers, leading teams of excellence in various aspects of blockchain technology, and licensing.

Expertise

The Implementing and managing a blockchain project are difficult. Good knowledge from the company is required to go through the whole process. It counts as one of the drawbacks

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of blockchain because it requires hiring multiple experts in the blockchain space, which leads to problems

Conclusion

There will be complete automation of accounting in coming days, this we can draw from current scenarios itself. Almost all leading finance organisation has started to implement the various technology. The artificial intelligence (AI) and machine learning has taken place in various financial fields. In the field of accounting already AI like Expert System has made their effective existence, Expert system software working has already made their significant impact. In same manner blockchain technology is growing with same pace, having distributed ledger concept amongst node which make more secure and valid. This feature makes this technology as most transparent and efficient, which helps to maintain integrity of data and quick processing.

Though this has some constraint like implementation, need of expert knowledge, cost etc. The Future of Accounting is Blockchain Technology making industries has already accepted this change and making effective management practice with the help of this technology.

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