

Blockchain Technology Revolutionizing Accounting

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Abstract

Technology is at the forefront of a paradigm shift that will transform the subsidiary industry. A few decades ago, in accounting, there was a shift from manual accounting to computerized-based accounting, which threatened the existence of accountants, but it was understood that accountants wanted to adapt themselves to computer software. With the advent of blockchain technology there is a paradigm shift in the accounting process. Blockchain has revolutionized technology industries. Blockchain has brought innovation to the industry, especially in finance. In this paper, we describe technology and its impact on the accounting profession. Some of the technical and legal challenges need to be addressed before the blockchain can be fully embraced in the financial record keeping systems of the world. There is no threat to the role of the accountant or bookkeeper, but they can focus on the critical goals of accountancy, such as explaining the financial meaning of transactions and providing information to support best decisions. This paper is an attempt to explain the conceptual background, evolution and function of blockchain technology. It also describes the impact of blockchain technology on digitalization, its benefits, challenges in adopting technology, and recommendations for use in accounting.

Keyword: Blockchain technology, manual accounting, paradigm shift, revolutionized

1. Introduction

Technology is at the forefront of a paradigm shift that will transform the subsidiary industry. A few decades ago, in accounting, there was a shift from manual accounting to computerized-based accounting, which threatened the existence of accountants, but it was understood that accountants wanted to adapt themselves to computer software. In a machine driven environment. However, technology is changing rapidly, and there is significant progress in technology, which means that the existence of an accountant and bookkeeper in any organization may be threatened, but the accountant is not completely out of service. With the advent of blockchain technology there is a paradigm shift in the accounting process. This technology has already gained prominence in various sectors, especially in the financial sector. Blockchain has the potential to increase the effectiveness of the accounting process for transactions and assets, acting as a mechanism for the universal mechanism of bookkeeping entry. Blockchain helps accountants to be transparent in their companies' resources and responsibilities and free up resources to focus on planning and evaluation rather than recordkeeping.

2. Literature review

Nakamoto (2008) introduced blockchain technology to eliminate intermediaries and allow direct transfers over the network. **(Kiviat, 2015)** Blockchain technology integrates technical and non-technical concepts and enables value transfer without a central organization. **(Yli-Huumo et al., 2016)** concludes in his work that the decentralized nature of blockchain technology makes data transparent compared to centralized transactions. From the outset, blockchain technology has

emerged as the basic foundation for bitcoin cryptocurrency. But (**Irrera & Schumacher, (2017)**) concludes that this devastating technology has widespread impact on blockchain technology. Blockchain technology has impacted many aspects of our lives. There are only a few published papers treating technology from business perspective. Some studies deal with blockchain technology applications (**Ylei-Humo et al., 2016**), and numerous studies (**Beck, Sepulch, Lolik, & Malone, 2016; Lindman et al., 2016**) laid stress on technical problems related with blockchain technology so in this paper an attempt has been made to see the applications of blockchain technology in accounting, challenges in its adoption and skills required by accountants in future.

3.1 Concept of Blockchain

Blockchain is a distributed database of records of digital parties. Transactions are inserted into blocks and follow the exact order in which they occur. Blockchain is a digital ledger created to restrict transactions between different parties on the network. It is a peer-to-peer, Internet-based distributed ledger that encompasses all transactions since its creation. With the advent of cryptocurrencies, the idea of blockchain technology has become mainstream, especially bitcoin. Public Ledger uses blockchain technology for every transaction made with bitcoin. While bitcoin may not fully enter the world market, the technology behind it, blockchain can do so. Blockchain is not a single technology, it is a way of doing things to record transactions.

The main features of the blockchain can be explained with the help of three P's: propaganda, sustainability and programmability.

Propaganda - All participants will have access to a complete copy of the ledger and all copies are identical and equal. No party has control over the ledger. Whenever a transaction is posted, copies of it will be distributed to all participants.

Sustainability - All transactions and documents are permanent and cannot be disassembled or deleted.

Programmable - Most blockchains are programmable, which allows them to automate new transactions and controls through smart contracts.

3.2 Evolution of Blockchain

1991-201991-2008: Early days of blockchain technology

In 1991, Stuart Haber and W.W. In 2008, the first blockchain Nakamoto, the first application of digital ledger technology, developed bitcoin technology and accessed many applications beyond cryptocurrencies.

The Evolution of the Blockchain: Step 1- Transactions

2008-2013: Blockchain 1.0: Bitcoin Emergence

The first application of bitcoin blockchain technology was in 2008, and in his whitepaper it was described as an electronic peer-to-peer system. Nakamoto set up the Genesis Block, from which

other blocks were dug up and interconnected, resulting in one of the largest block networks of information and transactions.

The Evolution of Blockchain: Phase 2- Agreements

2013-2015: Blockchain 2.0: Ethereum Development

Vitalic Buterin began working on a blockchain that could serve a variety of functions beyond a peer-to-peer network. In 2013, Ethereum developed into a new public blockchain compared to bitcoin, which allows people to record other assets such as slogans and contracts. It can support smart contracts and decentralized applications.08: Early Years of Blockchain Technology

Evolution of Blockchain: Phase 3- Applications

2018: Blockchain 3.0: the Future

As Ethereum and Bitcoin functionality evolve, many projects have impacted the capabilities of blockchain technology. NEO is one of the new blockchain applications, the first open source, decentralized and blockchain platform launched in China. To accelerate the growth of the Internet of Things, some developers have come up with iota in the process with advanced blockchain technology that offers zero transaction fees and unique verification processes. Monero Scash and Dash Blockchain are other second-generation blockchain platforms that address some of the security and scalability issues associated with early blockchain applications.

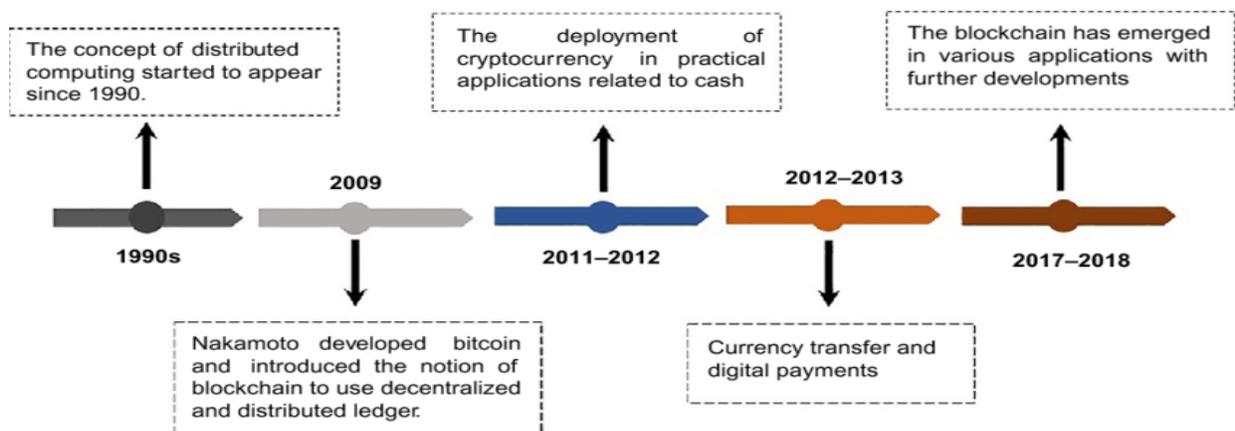
2015: Hyperledger

The Hyperledger Project, launched in 2015 by the Linux Foundation, seeks to advance cross-industry cooperation in the development of blockchain and distributed ledgers.

2017: EOS.IO

EOS.IO was introduced in 2017 and its main objective is to promote the use of decentralized applications by an autonomous decentralized company.

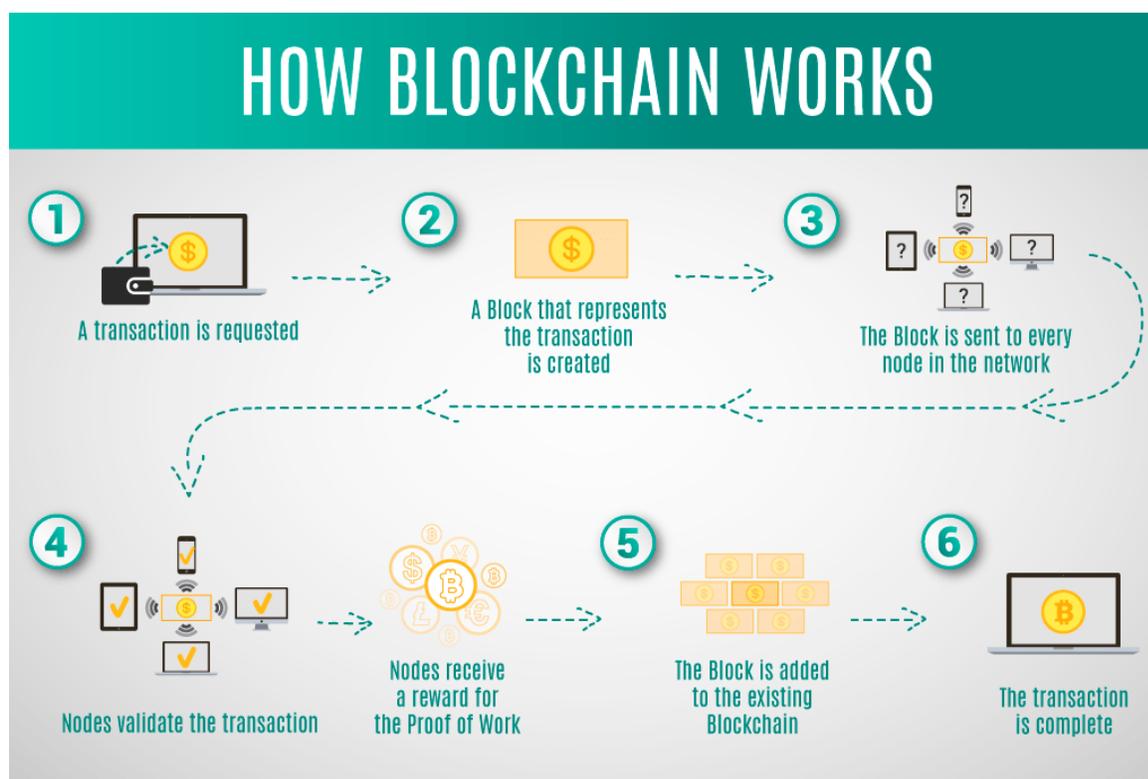
Figure 1 Timeline of block chain



Source:<https://www.researchgate.net/publication/329882609> Technical aspects of blockchain and IoT

3.3 Working of blockchain technology

In the blockchain process, there are peer-to-peer nodes. It sends to the nodes upon request to process the transaction. The nodes are checked using the transaction computer algorithm. When most nodes confirm a transaction, a block is created and added to the blockchain of previously checked blocks. This completes the transaction and updates the ledger. This process can be completed without the involvement of a third party intermediary, as in a traditional transaction, a central third party records the transaction and sends a copy to the transaction. This provides security for the transaction as there is no risk of cyber attack. Each block has its own hash and the hash of the previous block, so security issues in the blockchain are handled properly. Once the block is suppressed, its hash is changed and the blocks are connected to each other by a hash, so the following blocks are invalid because they do not contain the previous hash. This way data is secure. Allows the user to slow down the process of creating new blocks of a specific node called proof-of-work miners. Blockchain protocols ensure that the network behaves as planned and planned by its creators.



3.4 Current state of accounting technology

Traditionally, all transactions of accounting were recorded in column papers and stored in binders, but with the advent of computers, counting jobs changed media and ideas, but from mechanics papers to programs. Paper ledgers pave the way for spreadsheet applications as they mushroom technology for accountancy. Accounting professionals transfer files back and forth from shared drives or email to peers and clients. Multiple people can work together by making those spreadsheets more sophisticated, sharing content management systems with professionals, or storing them in the cloud. All businesses should be more hostile to remote jobs. Owners of

today want flexibility in how and where they work, as well as the mechanisms and procedures that allow organizations and accounting professionals to do this. The basic requirements of current or future team accounting firms are the flexibility and ability to work from anywhere. More and more data goes into the clouds that anyone can access at any time, so a self-auditing record provided by blockchain technology is essential.

3.5 Advantages of Blockchain

Reducing Errors: One of the biggest advantages of blockchain in the accounting industry is the ability to make almost trivial errors. Once the data is entered, smart contracts automatically reduce the number of human error through a number of digitization functions.

Fick Efficiency: Blockchain is a fast and authentic database. With the help of blockchain, getting data into the system can be more efficient than interacting with old accounting software applications.

Reduces Fraud : Blockchain provides an unchanged and transparent record of all accountancy-based data, enabling accountants and CPA firms to streamline their processes and audits and ensure that records are accurate and accurate. To maintain a record, all copies of a distributed ledger need to be changed at the same time, which is quite impossible.

Easy reconciliation: Smart contracts can perform a variety of tasks by fulfilling certain conditions, and accountants can automate many compromising tasks by using smart contracts, which can reduce the burden at the end of the month.

Reduces cost: Blockchain has the ability to manage and coordinate ledgers and reduce the cost of ensuring accurate ownership and asset history. Increased efficiency and reduced errors save costs for the company.

Increase in scope: Blockchain avoids compromises and provides accurate information about transaction history, so accounting can be increased by considering additional areas such as data value at a company.

Improved regulatory compliance:The additional security DLT provides to meet regulatory requirements reduces agency overhead. If regulatory authorities adopt blockchain technology, it is imperative to adopt DLT in some critical financial sectors.

3.6 The future of accounting with blockchain technology The double entry system is the basis of the modern financial accounting system, which gives managers the confidence that their books are true, but companies need to audit certain accounts for the trust of outside parties. A designated person, but also managing and coordinating the ledgers blockchain can provide complete confidence. With the help of blockchain, there is no need to keep separate records based on transaction receipts, companies can directly record transactions in the joint register and create an accounting records interlocking system. All data is cryptographically distributed and closed so they are not corrupted or manipulated. Auditors can verify large amounts of data in a short period of time, just as the transaction is examined only in a notary electronic manner. Reduces the cost and time to perform the audit. The four largest companies that use blockchain technology are Ernst & Young, KPMG, PWC and Deloitte.

3.7 Skills for the future

As the need for reconciliation and conflict management decreases, the skills represented in accounting continue to evolve, and other activities such as technology, consulting and value-added services develop.

Engineers with detailed knowledge of blockchain operation should not be accountants. But they need to play an advisory role in blockchain adoption and think about the impact of blockchain on their businesses and clients

Accountants' skills are required to understand the principles and functions of blockchain.

Accountants act as a bridge between technicians and business partners.

In the future, more and more records will move to blockchains, and auditors and regulators will be able to verify transactions in real time and verify the reality of those transactions.

3.8 Challenges for Adoption of Blockchain Technology

- Trustworthy third-party transactions are secure, so consumers must take advantage of the fact that their electronic transactions are secure, secure and complete, but there is resistance to change, which is the biggest challenge
- The first set of transactions requires downloading and validating the entire set of blockchains before the first transaction is executed. Increasing current emerging services based on blockchain is challenging.
- Significant migration work is needed to transform existing contracts or business documents into new blockchain-based methods.
- Lock blockchain cannot recover lost private keys.
- Blockchain technology is new and emerging, making it difficult for regulators to acquire the technology.
- Financial institutions are ideal for collaborating with and sharing information
- Financial institutions are reluctant to invest heavily before blockchain technology matures.
- Most of the accounting software is not compatible with blockchain technology. Although the accounting firm has decided to adopt blockchain technology, current software may not adopt it.

3.9 Recommendations

The following are recommendations to overcome the challenges of adopting blockchain technology

- To adopt blockchain technology, cloud-based accounting services must be purchased when available, and a blockchain developer is required to create custom user interfaces.
- Financial institutions must invest in advance as blockchain technology is developed for competitive advantage.
- Regulators in transactions must adapt to emerging pattern changes.
- Build a blockchain framework that applies to a wide range of use cases.
- Regulators should be wary of excessive regulation without stifling innovation.

- Don't worry that blockchain technology will soon make its presence known to the accounting industry. Numeric organizations need to be ready to adopt without wasting time.
- Innovators must collaborate with regulators to support their products with reliable energy.

4. Conclusion

Blockchain has revolutionized technology industries. All businesses, including the non-profit public sector, work on blockchain platforms. You need to know about blockchain to start manufacturing. Consultations with professional blockchain developers can also be easy and early adopters, which will make companies competitive in this emerging but good market. Whenever we introduce new technology, people worry about having a current job. There are also difficulties in the industry. The blockchain will definitely destroy the accounting industry and the accountability of accountants will continue. The accountant role will change but it will not be deleted and the information will be interpreted and categorized before entering the blockchain. Due to the increased reliance on available information and the time it takes to consolidate and dispute documents with other parties, accounting becomes more efficient. By adopting blockchain technology, accountants and accountancy firms can provide the security and security of records to their owners and clients.

References

1. Atlam, Hany & B. Wills, Gary. (2018). Technical aspects of blockchain and IoT. 10.1016/bs.adcom.2018.10.006.
2. Beck, R., Czepluch, J. S., Lollike, N., & Malone, S. (2016). Blockchain-the Gateway to Trust-Free Cryptographic Transactions. Paper presented at the ECIS
3. Irrera, A., & Shumaker, L. (2017). UPDATE 3-JPMorgan Chase & Co leaves blockchain consortium R3. Retrieved from <http://www.cnbc.com/2017/04/27/reuters-americaupdate-3-jpmorgan-chase-co-leaves-blockchain-consortium-r3.html>
4. Kiviat, T. I. (2015). BEYOND BITCOIN: ISSUES IN REGULATING BLOCKCHAIN TRANSACTIONS. *Duke Law Journal*, 65(3), 569-608.
5. Lindman, J., Tuunainen, V. K., & Rossi, M. (2017). Opportunities and Risks of Blockchain Technologies—A Research Agenda.
6. Nakamoto, S. (2008). Bitcoin: A Peer-to-Peer Electronic Cash System.
7. Yli-Huumo, J., Ko, D., Choi, S., Park, S., & Smolander, K. (2016). Where Is Current Research on Blockchain Technology?-A Systematic Review. *Plos One*, 11(10), e0163477- e0163477. doi:10.1371/journal.pone.0163477
8. [ZEMING YU](#) Posted 2 July (2018) Blockchain – Considerations for Policymakers and the Actuarial Profession by
9. Chartered Accountants Australia, The Future of Blockchain: APPLICATIONS AND IMPLICATIONS OF DISTRIBUTED LEDGER TECHNOLOGY; Available at <https://www.charteredaccountantsanz.com/-/.../c1430d6febb3444192436ffc8b685c7c>
10. Deloitte, Blockchain Technology; A game-changer in accounting? Available at https://www2.deloitte.com/.../Deloitte/.../Blockchain_A%20game-changer%20in%20a.
11. <https://mlsdev.com/blog/156-how-to-build-your-own-blockchain-architecture>

12. <https://www.Blockchain-council.org/Blockchain/what-is-merkel-tree-merkel-root-in-Blockchain/>
13. https://www.researchgate.net/publication/329882609_Technical_aspects_of_blockchain_and_IoT