

Blockchain Technology in Accounting & Audit

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Abstract: The advancement of technology poses a need for protection and verifiability of data which brings into the market, The Block chain Technology. It connects the markets, suppliers, customers & banks by solving the problem of defining too many ledgers and transactions separately by giving a common trusted distributed ledger. It brings into real-time visibility and transparency and solves security issues by maintaining anonymity and creating unforgeable accounts. While we associate blockchain with digital currency, it has a wide range of application in Accounting and Audit making an upcoming revolutionary technology.

Objective:

1) To study the applications of block chain in Accounting and Auditing

Key words: Blockchain, Technology, Accounting, Audit, Security.

I. Introduction – Blockchain

Blockchain is the ability to track and transfer value in the form of assets and/or in money in a secure guarded way with real time interface on same lines that we transfer information using technology can drastically bring about changes in the way business' are carried out. This not only changes individual organizations but changes the entire industries and their supply chain.

Blockchain is a technique for recording data as advanced record which contains exchanges, assentions, contracts and bills appropriated over a few thousand PCs. Advanced records are lumped together into hinders under limited cryptographically and sequentially into a chain utilizing complex calculations. This ledger can be shared but can be updated, altered by the consensus of the majority thus it is a 'distributed trust'. This peer to peer network makes the users to validate records without the use of central authority therefore it changes the way traditional accounting and auditing is carried out.

Characteristics Of Blockchain

Blockchain is a ledger that shows the histories of accounts which are replicated and distributed to every participant. It creates authenticity and privacy of identity by using cryptography algorithms. It is also a decentralization protocol for shared control, tolerating disruption and for transaction validation. The blocks are connected in the order of its chronological occurrence which provides a trail to analyze the transactions. The information are in the form of digital media which eliminates manual & paper back documents.

Blockchain – Advantages

Blockchain simplifies the following:

For Logistics: By increasing real time visibility, efficiency, transparency, verifiability thereby reducing the cost.

Compilation of property: By making it unforgeable while lowering transfer fees, hence decreasing the number of disputes.

Capital market: By increasing the settlement time which inturn changes credit and nullifies reconciliation cost by making records transparent and verifiable.

Blockchain connects markets (public & private), networks (suppliers, customers, banks). Every market network defines a ledger which records all business activities in data bases. One common trusted virtual ledger which is replicated and produced collaboratively for distributed validation.

Introduction – Accounting

According to Smith and Ashburne, “Accounting is the art of recording, classifying and summarizing in a significant manner and in terms of money, transactions and events, which are, in part atleast, of a financial character and interpreting the results thereof.”

Accounting – Advantages

Accounting has its own advantages which has been a boon to the organization in many ways.

Accounting is engaged in maintenance of business records which will provide information to the owners, government, etc in analyzing how fast the organization is progressing. The records created in the Accounting process helps the outsiders to value the business before lending their money for the business. It helps the Top Level Management in making appropriate decisions which will result in the growth of the organization.

For any activity to be performed perfectly there must be a proper plan for it. Accounting helps in analyzing the market conditions & preparing proper plans for the organization to prosper. Since Accounting is recording of all transactions of the organization, it becomes easier to prepare the financial statements of the organization. In the later stage, it also helps in the controlling operations of the organizations.

Accounting prepares financial statements of a particular year which can be used for comparing the results of different organizations or even compares the results of the organization itself. The reports prepared by the Accountant acts as evidence in the Court of Law in case of any disputes amongst third parties of the company.

Accounting – Branches

Accounting can be classified on the basis of its performance performed. Each Accounting branch has different functions which enable the organization to focus on the day to day activities, but each branch is linked to each other for the performance to be done.

Financial Accounting is the basic accounting branch that is concerned with the recording, classifying the information which has a direct link to the profit & loss of the organization.

Cost Accounting is concerned with the analyzing of cost incurred per unit used for the production of the final product. It also helps the organization in determining the price at which the final product has to be sold.

Management Accounting is concerned with the decision making which will affect the growth of the organization. This branch also is engaged in analyzing the flaw made in the process of recording, classifying & taking preventive measures.

Introduction – Auditing

According to Montegory, “Auditing is the systematic examination of books and records of business or the organization in order to ascertain or verify and to report upon the facts regarding the financial operation and the results thereof.”

Auditing – Advantages

Auditing provides greater reliable data which helps the Business owners in making important decisions. Through Auditing, efficiency of the data recorded are also improved which effects the decision being made by the Business owners. It assists with easy dealing with the third parties of the business and improves the management control of the organization.

Auditing ensures compliance of legal requirements of the organization. It acts as a reliable base for investment by the creditors and investors of the organization. The reports produced by the Auditing department ensure to safeguard the interest of the investors and creditors in the organization.

Auditing reports of any organization helps to determine the tax liability of the organization. The report also acts as evidence in the Court of Law in case of any disputes.

Auditing – Types

Auditing can be divided into several types based on many parameters namely ownership, time, objective.

Auditing based on ownership can be explained by the ownership status of the organization i.e. Sole Proprietary (single owner), Partnership firms, Companies, Co-operative Societies & Government Departments.

Auditing based on time describes when certain Auditing is performed by the Auditor i.e. Continuous Audit (throughout the year), Final Audit (end of the year), Interim Audit, Occasional Audit & Balance Sheet Audit.

Auditing based on objective states the motive behind the Auditing i.e. Independent Financial Audit, Internal Audit, Cost Audit, Tax Audit, Government Audit & Management Audit.

II. Literature Review

In the book, *“Blockchain technology: Beyond bitcoin. ApplInnov Rev 2:6–19”* (2016), Crosby states that a blockchain is essentially a public ledger of transactions or events recorded and stored in chronologically- and linearly-connected blocks. Later blocks then maintain the hash of previous blocks.

In the book, *“Leaderless, Blockchain-Based Venture Capital Fund Raises \$100 Million, And Counting”* (2016), Morris explains a blockchain as a distributed database that maintains a continuously-growing list of data records secured from tampering and revision. It consists of blocks, holding batches of individual transactions. Each block contains a timestamp and a link to a previous block.

In the report, *“Blockchain technology: opportunities and risks”* (2016), Condos J stated Blockchain as a type of distributed, electronic database (ledger) which can hold any information (e.g. records, events, transactions) and can set rules on how this information is updated.

In the book, *“Blockchain: Blueprint for a New Economy”* (2015), Swan describes Blockchain technology as one that enables records to be “shared by all network nodes, updated by miners, monitored by everyone, and owned and controlled by no one”.

In the journal, *“Visions, Part 1: The Value of Blockchain Technology”* (2015), VitalikButerin explains the blockchain as a magic computer that anyone can upload programs to and leave the programs to self-execute, where the current and all previous states of every program are always publicly visible, and which carries a very strong crypto economically secured guarantee that programs running on the chain will continue to execute in exactly the way that the blockchain protocol specifies.

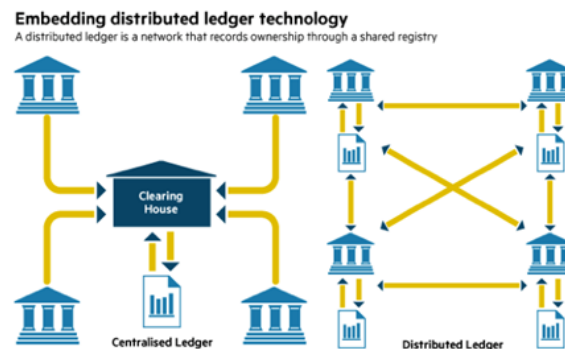
In the article, *“Why Bitcoin has value”* (2014), Van Alstyne describes Blockchain technology as a sequential distributed database where the entire earlier transaction history is stored and shared in a (block) chain in a public ledger.

III. Conclusion

The purpose of the study is to explain the blockchain technology being implemented in Accounting & Audit of an organization. With the use of blockchain technology in the organization, manual procedure of recording & verification is reduced. This literature review also explains about the usage of Blockchain Technology, its effectiveness, benefits derived. This literature review is based on studies & journals published in the past few years. The most effective method to reduce the frauds & errors in recording and verification is by implementing the Blockchain Technology in the organization.

How does a blockchain technology work?

Every operation appends a block on valid transactions to the log. Log content is verifiable. Nodes produce transactions. The nodes run a protocol to construct a ledger, log entries, hash chain. A hash is a one way function that has multiple uses in a block chain and decentralized system. In digital media, all documents are just strings of 1's and 0's. A hash work takes any computerized media and runs calculations on it to create a settled length and one of a kind advanced yield known as a hash. Each time the same computerized media is put through the hash work, a similar yield is created. At the point when a solitary piece is changed, the entire length changes. The arithmetic behind the hash work guarantees that there is no real way to infer the first computerized media setting from the hash making it a restricted capacity. In a blockchain, documentation of mining expects diggers to take care of an issue with a known incomplete contribution to make hash target. Merkle tree preserves date integrity. Each block of data contains multiple transactions. Each transaction is passed through the hash function and pairs of hash function are passed again through the same hash function. The last 2 hashes are passed to attain the root hash. Thus creating the merkle tree. It allows detection of any changes to the data by simply re-running the hash function. One block is connected to another via fingerprint and a time stamp.



Source: <https://www.ibm.com/blockchain/infographic/finance.html>

Blockchain Technology In Accounting & Auditing

Blockchain is an indispensable ledger, a canonical source of truth. The traditional accounting practice comprises of the financial records in private ledgers and relies on accountants to reconcile them against those maintained by the third party counterparts. This tedious and labor intensive work brings upon higher human resource cost, lower efficiency and work load especially on the month and year ends. A continuous imparted record carefully designed component and legitimate perceivability setting an assistance sparing labor and time. It can likewise limit potential debate. Accordingly, blockchain alters the conventional techniques for invoicing, documentation, contracts and installment preparing. Each bookkeeping exchange on the blockchain followed. The whole paper over different dept. or, on the other hand even organizations is more tractable. Blockchain is likewise utilized as a part of following responsibility for and impalpable resources like crude materials, advancement of keen contracts and protected innovation rights. The solicitations are consequently paid in the wake of passing framework watch that the products have been gotten as per the request and detail and that assets are accessible in the organization's financial balance. It mechanizes these physically performed assignments. It additionally enlists stock framework for an advantage.

When the company submit the audited reports for tax and regulatory purposes and these audits are costly exercises which requires long hours, input from accountants. It also involves a lot of paper audit of orders, delivery notes, invoices and payment records which are maintained by the company and third party verifications. The blockchain provides data integrity of electronic files through use of hash string and digital finger print. This is immutable i.e. a transaction once agreed upon and recorded, it can never be changed. One can subsequently record another transaction to change its state but never change is its history. Thus time stamping the data on to the blockchain. Blockchain finally allows traceable audit trails, automates the auditing processes and authentication of transactions.

Ongoing, worldwide exchanges occurring 24 hours per day, seven days a week and PC produced exchanging exercises that are measured in milliseconds are only two or three cases of how the present money related framework is altogether different from only a couple of years back. The test is to have an arrangement of organization that is confided in, straightforward and ready to adapt. With focal clearing houses, bookkeepers and review firms extended as far as possible in endeavoring to stay aware of expanding and evolving request, the landing of a radical new way to deal with the fundamental help structure couldn't come soon enough. Enter blockchain, a framework in view of dispersed records and computational rationale that could give the way to beat the blockage. Billions have been filled the advancement of blockchain by money related foundations, financial speculators and governments alike in an excited and supported time of venture. Don't imagine it any other way, blockchain is in for the whole deal, and fund experts, as every other person connected to the budgetary framework, must adjust.

Conclusion Of The Study

The blockchain innovation can possibly shape shift the idea of the present bookkeeping. It might constitute a way to endlessly mechanize bookkeeping forms in consistence with the administrative prerequisites. As portrayed previously, there are various beginning stages to use blockchain innovation. A course of new applications will probably take after that is based over each other, driving route for new, extraordinary administrations.

Defined as open Distributed ledger records verifies transactions with none trustworthy central authority maintains continuous growing list of ordered records known as blocks. Block - timestamp and link to previous block via finger print immune to modification of knowledge and can't be altered retroactively.

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