

EXPLORE BLOCKCHAIN BEYOND BITCOIN

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Abstract:

Blockchain as a technology took the world of transaction by storm with the popular use of bitcoin. However, blockchain as a technology can also be implemented in other areas that tap the tamper-proof nature of digital ledger and establish trust. Many startups and the government is encouraging the use of blockchain to solve existing problems. In this paper we look at accounting, audit, fintech, business & governance and real estate.

This paper is an attempt to explore the applications of blockchain technology in areas other than cryptocurrency. The research is a combination of exploratory research and case study based research. Research is based on secondary data. In this paper, researcher looks at accounting, audit, fintech and real estate.

Keywords:

Blockchain, Startups, Bitcoin, Fintech, Governance, Real Estate

Introduction:

On 31st October 2008 Satoshi Nakamoto, an unknown person or persons who developed bitcoin, authored the bitcoin white paper titled Bitcoin: A Peer-to-Peer Electronic Cash System. This idea on paper was created and tested in 2009. Finally in 2011 as part of the implementation Satoshi Nakamoto devised the first blockchain database which created the cryptocurrency bitcoin. Today for many of us blockchain is synonymous to Bitcoin or cyptocurrency. However blockchain is the technology underlying bitcoin or any such cryptocurrency. Blockchain is a system for electronic transactions without relying on a physical intermediary which is usually required to create trust, business logic or records. Blockchain results in an electronic transfer system based on a cryptographic proof instead of trust which allows any 2 willing parties to transact directly with each other without the need for a trusted third party. For eg. Data miners are like gold miners, as the gold increases with mining, bitcoin too increases with mining. The very existence of intermediaries in trade, commerce and business is due to lack of trust between the transacting parties. Thus, the advent of blockchain technology is a game changer of commerce where we may no more need the traditionally known intermediaries between any two or more transacting parties. Blockchain could benefit many stakeholders who do not benefit from the current infrastructure in trade and commerce. This paper is an attempt to explore the applications of blockchain technology in areas other than cryptocurrency. The research is a combination of exploratory research and case study based research. It is based on secondary data. In this paper we look at accounting, audit, fintech and real estate.

Scope of the study:

This research is an attempt to understand the application of the technology of Blockchain beyond Cryptocurrency. Researchers tried to cover areas like accounting, audit, fintech, governance and real estate. The research is entirely based on secondary data and is in Indian context.

Objectives of the Study:

1. To explore the bitcoin technology.
2. To understand its application accounting, audit, fintech and real estate.
3. To explore the pros and cons of the technology.

Research Methods used:

Research Design:

The research is Exploratory and case study based.

Data Collection:

Secondary data is collected from various websites, magazine and books.

Blockchain and Future of Accounting and Audit

Today our accounting runs on the principle that the finance manager or the CFO will do the right thing. Time and again we have seen that centralised control can lead to accounting frauds which happened with Enron, Worldcom, Toshiba, Satyam etc. The fact that humans are subjected to err or behave in an unethical manner combined with the fact that there are many stakeholders who rely on the financial reporting generated through accounting forces us to rethink the way accounting is processed today. Since mere digitisation of accounting records or a mere audit of it is not sufficient to validate the accounting information since audit only reports the accounting information as true and fair and does not certify it to be 100% true.

A blockchain is a digital ledger created to capture transactions conducted among various parties in a network. It is a peer-to-peer, Internet-based distributed ledger which includes all transactions since its creation. Hence the blockchain technology has the potential to impact all recordkeeping processes, including the way transactions are initiated, processed, authorized, recorded, and reported. Blockchain is a digital ledger technology (DLT), which focuses on recording and storing transactions of any type in a shared platform through nodes. Since there may be issues with respect to privacy of data in accounting the nodes could be familiar nodes associated with the company without the nodes knowing each other thereby sustaining integrity and authenticity. Blockchain makes the records time stamped i.e. immutable which would help curb most of the accounting frauds.

Change in the accounting process will naturally change the way audit of these transactions is carried out. To achieve this will not be easy but the end result could be nothing short of revolutionary and could result eventually in significant cost reduction for the company along with evolution of accountants and auditors.

Blockchain and Fintech

Blockchain brings with it new levels of data transparency, faster access to information and features like “smart contracts” will bring significant changes to financial operations. The financial intermediaries like banks, insurance companies exist due to the lack of trust between two transacting parties. Blockchain is a mass corroboration of cryptography and coding to establish trust without the need of a financial intermediary. Blockchain has a distributed ledger which holds information just like how the SEBI or the RBI holds information. The Blockchain allows any two people staying far off from each other who don't know or trust each other to transact securely which forms the very basis of finance sector.

The digital decentralized autonomous organization (DAO), and a form of investor-directed venture capital fund was crowdfunded via a token sale in May 2016. It set the record for the largest crowd funding campaign in history. This marks the revolution blockchain technology can bring in the finance sector.

Blockchain and the Changing Business and Governance Model

Blockchain could disrupt many of the existing business like travel agents, insurance agents, real estate agents, ecommerce, third party payment processors, notaries, video sharing websites to name a few. Rather few of them are already disrupted due to the advent of start-ups with blockchain technology. Business today will have to compete with technology to win with people. In order to win businesses need to be able to evolve with technology which appeals to the masses, helps reduce cost and maximise profit and contributes to the ecosystem this this keep the business viable and leads to sustainable development. Blockchain is one such revolutionary technology which businesses can leverage on.

Filecoin raised over \$200m in a matter of days in their crowd funding to decentralize cloud storage and disrupted traditional cloud storage companies. OpenBazaar is an open source project developing a protocol for e-commerce transactions in a fully decentralized marketplace which may jeopardize centralized marketplaces like whose very business model exists on aggregator system [2]. Also blockchain could kill taxi aggregators which too work on the principal of centralized clearinghouse to connect providers with individuals in need of their services. Peertracks is a music site that runs on a blockchain system called MUSE. Peertracks depends on the creation of “artist tokens,” a sort of Bitcoin alternative, the value of which depends on the popularity of the artist who created the coin. As in basic economics, the higher the demand, the higher the worth of the artist token. The less demand, the lower the worth. The MUSE blockchain purports to be an open, global ledger, specifically engineered and tailored for the music industry. MUSE seeks to not only manage copyrights but also the payment mechanism itself. MUSE will also allow artists to create their own “Notes” – a limited edition, cryptographic token that acts like a VIP pass into the artist’s career. Notes initially allow artists to crowdfund and know who their most engaged fans are. For the artist, there is great value in knowing who exactly is supporting him financially and enabling him to continue making a living from music.

Blockchain in effective governance of real-estate.

Real estate is a field which has a huge potential for blockchain application because of the huge amount of documentation that goes behind maintaining title deeds, property history and keeping all of this tamper-proof. According to study by Daksh [4], almost two thirds (66%) court cases are related to land or property disputes. In India, where the pending backlog of court cases is estimated to be close to 27lakhs [5], offers a huge potential to solve the problems of land issues using blockchain technology.

Factors that lead to problems.

1. Lack of traceability: With property being allocated and changing hands since the colonial era, and multiple stakeholders claiming ownership, it is extremely difficult to establish correct facts.
2. Corruption: Fake documents, forgery, fraudulent documentation leads to incorrect records maintained and property disputes

Why blockchain?

It can be argued that converting manual records into digital records and encrypting could be enough to solve the above problems. However, in doing a centralized repository of records needs to be created. In such a scenario, every transaction is dependent on one central authority to verify the authenticity of each record. This central authority would also have the infrastructural capability to maintain massive amount of historic data, have the capability to add new records each day, process the massive number of records in acceptable time to effectively give meaningful reports about history of land titles, ownership history, taxes paid etc. Given the scale of data, a centralized repository may not be a feasible option.

If only a single central authority gets to approve the record that goes on the ledger, it would take a lot of time to validate every single record by the time it gets to the repository to become useful. The use of a decentralized architecture could actually delegate the act of validating records thereby reducing time taken to validate. However, it would lead to the problems of logical consistency in validation because a single record is validated only by one sub-node.

Blockchain can solve the above two problems because blockchain uses a distributed network to maintain records. This means that every node in the blockchain network keeps a copy of the ledger. This means that even if one node is not working, data is not lost and data integrity is retained. The authority to validate data is distributed to multiple parties and an approval from majority actually leads to a transaction getting logged to the ledger. This means the same record has been validated by multiple nodes, thereby removing the responsibility to authorize a transaction from a single central authority.

How blockchain is helpful?

Blockchain is a public ledger in which a record once entered and validated cannot be changed. Every transaction in blockchain is encrypted and approved by nodes and maintained in a distributed database system. Also, every current transaction is linked to the past transaction, so if a change has to be made to a current block, all the subsequent blocks need to be changed. This makes it very time consuming to alter an existing record. By encrypting with public and private keys, the authenticity of the sender and receiver's credibility is established, this eliminates the problems of traceability of records and documentation related frauds like forgery etc. Adopting blockchain and its features like smart contracts feature would remove fraudulent activity, speed up the process of property transaction, increase transparency and accuracy.

Case of Andhra Pradesh implementing blockchain in real estate:

The state of Andhra Pradesh is making use of blockchain technology to maintain land records and so far with the help of Blockchain firms has managed to create 1,00,000 land records[6]. Currently disputes in property issues accounts for a 0.5% drag on the GDP[6]. Expanding and embracing blockchain for real estate across the nation would lead to tapping of blockchain market thereby creating jobs and increase the ease of doing business. This will also lead to transparency and reduce the number of interfaces encountered in a property transaction which in turn saves time and money.

Blockers to adoption of blockchain

With bribery and corruption being rampant problems that India is grappling with [7], there could be troubles in implementing a transparent system whose objective is to abolish fake records. There could be cultural resistance to adopting blockchain.

Conclusion:

Blockchain is like the oyster which produces pearl some may lose its lustre like the bitcoins being popularised in the darknet but there are multiple lustrous pearls which the technology of blockchain can generate like the ones discussed in this paper. Blockchain combined with big data, IOT and other emerging technology can completely revolutionise businesses. The fact that the Hyperledger project by the linux foundation supported by big industry players is an evidence enough to understand the potential of blockchain technology. The fact that the blockchain model can be used in the peer to peer business where anything one creates accounting records, financial, legal documents, song, dance, books, research papers, educational content etc will be stored on the blockchain with its own unique ID just like bitcoin is today could be a game changer. If the content creator creates immutable records through digital time stamps which eventually become transparent, reliable, traceable and digitally safe, most of our business problems will be resolved.

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