

Blockchain Based Emanative Unassailable System: Use Cases and Repercussions

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Abstract- Block chain is one of the developing technologies which has advanced possibility for forthcoming claims. Block chain process is formulated based on blockchain thinking and formulating thinking. In block chain provides the flexibility to non-trusting members interacting in a genuine manner in a distributed network. Different use cases such as academic credentials, professional profile verification, KYC and record management are explained. The feature of block chain with respect to unassailable system is concluded with some of the major advantages and disadvantages of block chain.

Index Terms: Blockchain; philosophy, thinking, utility, secured, intelligence system, use case, KYC

I. INTRODUCTION

Blockchain is based on distributed data structure which shares information among the members across the network. A blockchain is a database shared by every participant in a given system. The block chain stores the complete transaction history of a cryptocurrency or other record keeping system.

Bit coin introduced the concept of blockchain basically to overcome the issue of double spending problem. A user requests for a transaction. A block is created representing the transaction. After that it is broadcasted to all the nodes of the network.

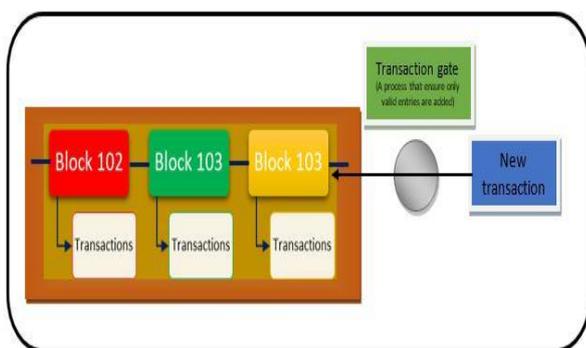


Figure 1: The transaction process of blockchain

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All the related nodes validate the block and henceforth the block is added to the chain. Finally, the transaction is verified and added.

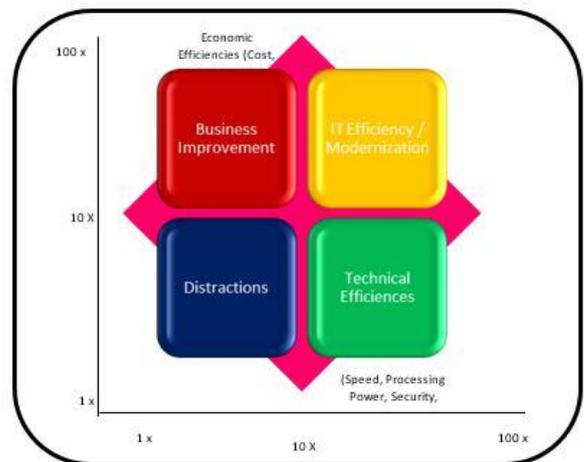


Figure 2: Block chain value creation

II. BLOCKCHAIN BASED UNASSAILABLE SECURED SYSTEM

A. Blockchain Thinking

Blockchain in combination with AI works like a human brain. The memory is like a conventional neural network, but stored in multiple locations. This memory is retrieved whenever required for performing some computations. The neural network learns from external and stores in the Blockchain [1, 2].

B. Architecture

The architecture of Blockchain thinker is input-process-output model. The input is various data obtained from external. This data is managed in distributed atmosphere. The productivity is the actions taken based on the consequences of handling.

C. Input

Various sensors are employed to collect data from external. For example, in a home automation system, sensors



such as gas detector, power detector, smoke detector, cameras, fire detector, temperature sensors, water level detector, proximity sensor, pressure sensor, water quality sensor, IR sensor, motion detector, accelerometer sensor, gyroscope sensor, humidity sensor, optical sensor are used to collect data from external. This data is stored in Blockchain as a distributed file. These files are retrieved using internet from distributed locations. These sensors are recording the mind of a person and his mood also into digital files. The daily routine of a person is digitally stored along with the person's mood and the actions based on his mood.

D. Processing

The data retrieved from distributed locations are analyzed using deep learning networks to take decisions. For example, there is a noise received from sound sensor, the noise is analyzed whether from a television set or from a cracker blast or from a toxic substance burst. The analysis is done by smart contracts running in different machines in a distributed way. A right decision is taken after the analysis. For example, in case of a fire accident, the owner of the house has to be alerted.

A person's behavior is studied by the deep learning networks. The mind and mood patterns are analyzed to predict the sequence of next activities. For example, when one person is doing exercise, the next action can be taking bath [3,4].

E. Self mining system

When one sensor transfers data, another sensor is doing mining to validate the genuineness of data transferred. For example, when a camera detects the owner waiting for the door to open, the proximity sensor mounted in the door is doing mining work. The camera sensor data is validated and approved by proximity sensor to take next action such as opening the door.

F. Proof of decision

The Blockchain thinker supports proof of decision by the participant nodes of the Blockchain. For example, in a home automation system, all sensors constitute a Blockchain. when camera sensor takes the decision to open the door, more than 50% of the sensors approve the decision to prove the genuineness of the decision. This avoids a malicious attack from external hacker to open the door illegally[5,6].

G. Output

The output of a Blockchain thinker is an action or a feedback loop or a just notification. The actions are executed by smart contracts running on different participant nodes of the Blockchain. Feedback loops help to learn the environment. Notifications are used to update the states of the participant nodes. For example, actuators are used to perform actions such as opening the door, closing the door, switching on the geizer etc. Figure 3 shows the blockchain adoption curve for the current and future era.

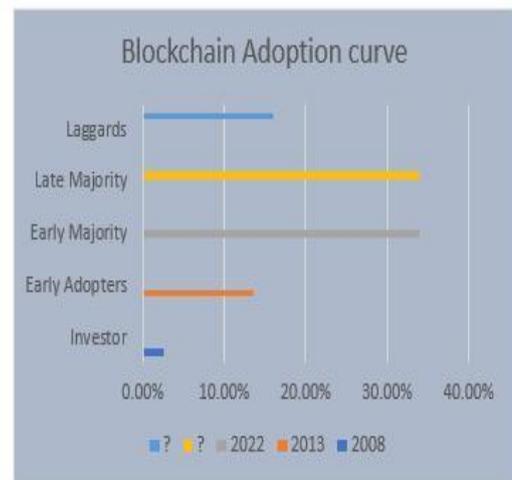


Figure 3: Blockchain Adoption curve

III. USE CASES

A. Academic credentials on Blockchain

Verifying the academic credentials is a tedious task which is mostly performed by third parties involving cost and time. As people graduating every year are increasing in countries like India and china and migrating to USA and other countries for higher education. In this process verifying the transcripts for foreign universities becomes a tedious task to eliminate and identify the fake certificates.

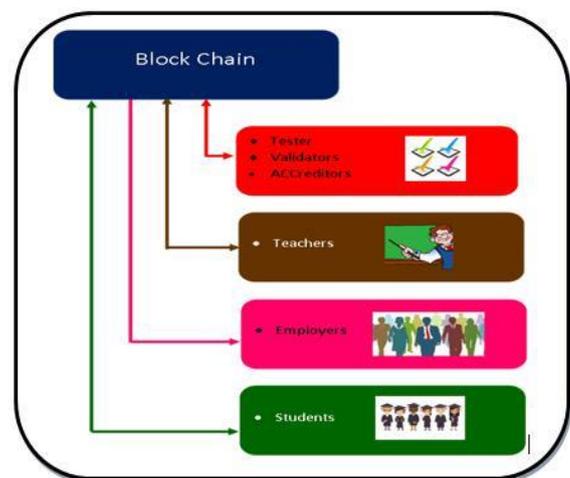


Figure 4: Blockchain in academics

In this process lot of third parties is involved incurring huge cost to universities and even employers which also involves counterparty risks. Blockchain would be an excellent solution to resolve this issue as shown in figure 4. Universities can issue their transcripts on Blockchain which are distributed, secure, and transparent and any employer / university can verify the credentials online thereby reducing fraudulent claims of unearned educational credits.



B. Professional Profile Verification

Profile verification has become of the biggest challenge in the industry. Whenever any company post jobs lot of candidates apply for the job and its very tedious to really validate the real candidates and candidates with fake experience in this process the company need to evaluate them using third parties which involves verifying the profile, bank statements and pay slips of the candidate and even some times these documents are also manipulated.

More and more people are migrating to other countries and cross-border banking transactions have grown enormously which needs to ensure security measures in the process. In the existing system as every bank have their own specification and this lack of standardization, complying to each request is time consuming. Due to frequent change of regulation rules it becomes irksome for any customer to provide same information to different banks.



Figure 5: Profile verification using Block chain

To eliminate and create a better professional profile platform we can implement anBlockchain based profile verification system as shown in figure 5 where employers and employees are involved as stake holders and the employer will validate the profile in Blockchain whenever any employee claims his experience in the company which eliminates fraudulent candidate profiles.

C. KYC [Know Your Customer]

KYC is a mandate for every customer of the bank to prove their existence by submitting proof of Address/Identity which involves collecting, tracking and store huge amounts of data in centralized servers.

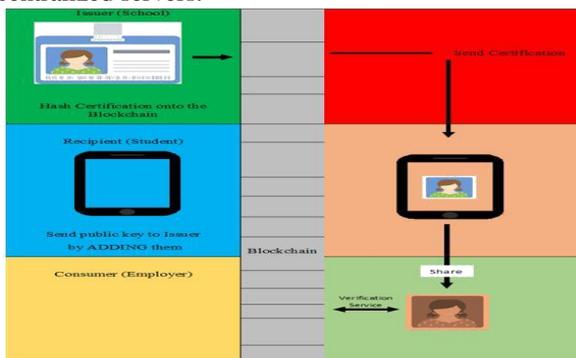


Figure 6: Block chain ID based KYC

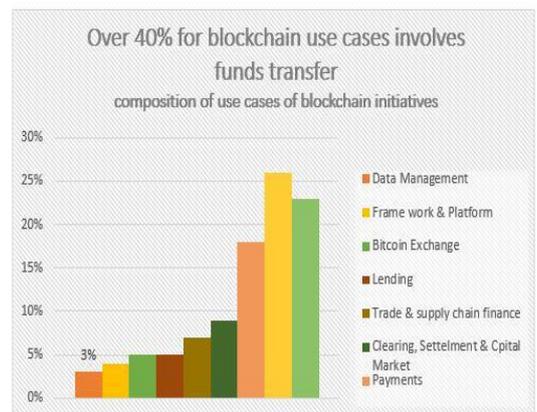
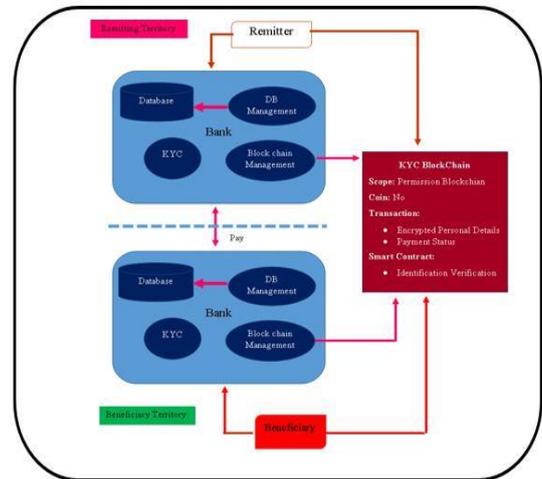


Figure 7: KYC Blockchain stages for remittance.

Blockchain would be an excellent solution in which customer enters into this eco system and bank verifies the documents and uploads to Blockchain as shown in figure 6 and 7. The updates can be accessed by any entities in real time as and when required which eliminates the tedious process submitting the same document to multiple banks as illustrated in figure 8.

- Power Consuming
- Cross chain transaction

V. CONCLUSION

Block chain process is formulated based on blockchain thinking and formulating thinking.

Many intelligent smart systems can be designed by blockchain thinkers by combining Blockchain with AI. The system is continuously learning itself and takes smart decisions like a human. It learns the mind, mood and behavior

of a person and records the mind map, mood swings and sequence of activities of a person. The transactions are made secured and avoid a malicious attack from a hacker. Blockchain give us resilient and truly distributed peer-to-peer systems. Progressive performance with objective-driven tokens, clearness and lessening of bureaucracy & transaction charges makes the arrangement more secured .Advantages and disadvantages of Block chain are finally stated after verifying various use cases.

REFERENCES

1. Kelly and A. Williams. (2016). Forty Big Banks TestBlockchain-Based Bond Trading System.[Online]. Available:<http://www.nytimes.com/reuters/2016/03/02/business/02reuters-banking-blockchain-bonds.html>
2. Kar. (2016). Estonian Citizens Will Soon Have the World's Most Hack-Proof Health-Care Records. [Online]. Available: <http://qz.com/628889/this-eastern-european-country-is-moving-its-health-records-to-the-blockchain/>
3. Suberg. (2015). Factom's Latest Partnership Takeson US Health-care. [Online]. Available: <http://cointelegraph.com/news/factoms-latest-partnership-takes-on-us-healthcare>
4. S. Lacey. (2016). The Energy Blockchain: How Bitcoin Could be a Catalystfor the Distributed Grid. [Online]. Available: <http://www.greentechmedia.com/articles/read/the-energy-blockchain-could-bitcoin-be-a-catalyst-for-the-distributed-grid>
5. Oparah. (2016). 3 Ways That the Blockchain Will Change the RealEstate Market. [Online]. Available: <p://techcrunch.com/2016/02/06/3-ways-that-blockchain-will-change-the-real-estate-market/>
6. Mizrahi. (2015). A Blockchain-Based Property Ownership Recording System. [Online]. Available: <http://chromaway.com/papers/A-blockchain-based-property-registry.pdf>
7. M. Walport, ``Distributed ledger technology: beyond block chain," U.K. Government Of ce Sci., London, U.K., Tech. Rep., Jan. 2016. [Online]. Available:<https://www.gov.uk/government/publications/distributed-ledger-technology-blackett-review>
8. S. Nakamoto. (2008). Bitcoin: A Peer-to-Peer Electronic Cash System. [Online]. Available: <https://bitcoin.org/bitcoin.pdf>
9. Double-Spending BitcoinWiki, accessed on Mar. 15, 2016. [Online]. Available: <https://en.bitcoin.it/wiki/Double-spending>
10. Eris Industries Documentation Blockchains, accessed onMar. 15,2016. [Online].



Fig 8: Multibank KYC using Block chain

D.Records Management

Securing and tracking government records is a challenging issue due to paper based processes and there is huge scope of manipulating and tampering records. In this scenario Blockchain enables to maintain a decentralized, transparent and secure system where all the government records can be stored and verified online without any third party involvement which increases the accountability between authorities and

Figure 9: Blockchain fund transfer use cases

those they serve. As data is distributed it eliminates the data threats and hacking of government records which is now a huge concern for government authorities.

E. Advantages of Blockchain

Many of the real time issues can be fixed using blockchain. It can be also applicable for maintaining our financial life. It also has a lot of impact on industries. Data management, frame work and platform, Bit coin Exchange and lending are the four main use cases involving the major part of fund transfer as shown in figure 9.

Some of the major advantages of block chain are

- Decentralized
- Distributed
- Immutable
- Trustless

IV. DISADVANTAGES OF BLOCKCHAIN

- Block Size variation
- Immutable Smart Contracts
- Market Specialization
- Higher Network Cost



Available:<https://docs.erisindustries.com/explainers/blockchains/>

