Blockchain Technology – The Ultimate Disruption In The Financial Sector

Dr.S.P.Dhandayuthapani[1], R.Vinitha[2]
Department of Management studies
[1] Assistant Professor, Anna University, BIT Campus Trichy - 24
[2] Student, Anna University, BIT Campus Trichy – 24

Abstract- *In today's world technological advancements is taking place in a rapid manner in each and every industry. Inspite of technological world, the financial sector is most likely to be impacted by the technical disruption.Over a decade technological modifications are being introduced which helps to comfort the process and the speed of conducting financial transactions. There are certain issues in financial sector such as fraud, scams, payment system, intermediation accounting practices etc.Block chain is a technology that overcomes the struggles faced by the financial sector. The underlying aspect for the emergence of block chain technology is the disruption faced by today's world. Under this study we just outline the aspects of a blockchain technology and explains the way how it resolve the issues.*

Keywords- Blockchain, disruption

I. INTRODUCTION

Blockchainwas discovered by Satoshi Nakamoto in 2008 to which acts as the decentralized public transaction ledger. The information are stored in blocks and are linked through a chain called blockchain. Each block contains a digital hash that has a link to its previous block. Blockchain is a decentralized public distributed ledger that is used to record transactions across many computers.Blockchainis capable of making transactions faster, cheaper, more secure and transparent.

The main components are transaction, transaction record and a system that validates and stores the transaction. The transaction are accessed and verified by users associated to the network, thereby making it less prone to cyber-attack. Blockchain eliminates unauthorized access by using cryptographic algorithm (SHA256) to ensure the blocks are kept secure. It was developed with the aim to enable individuals and organizations to process transactions by using consensus and complex algorithm to verify transaction by eliminating the need of a central bank or other intermediaries.

II. REVIEW OF LITERATURE

Smith used criteria such as confidentiality, integrity, availability for his concept " Blockchain for distributed cloud storage". But these do not differ from the CIA principle in IT security management.

Chinese researchers state that lack of clear product data(parameters) is the main difficulty in assessing blockchain suitability for different use cases. But in the later development process, when technical parameters are present the problem disappears. Multi-level framework can be created based on existing blockchain description technical forums.

Ovenden states that there are some factors that does not allow the technology to grow at reasonable pace. One of the main factor is current hype. Multinational companies such as IBM, Microsoft tries to create a centralized, commercialized blockchain products for which they are being criticized since the concept goes against initial idealogy.

Peck states that decision points are not so technically oriented but it gives more attention to functional aspects such as trust.

Victoria Limieux focused on applications of blockchain such as archival preservation and record keeping which brings lot of benefits such as transparency, efficiency, privacy. But still there exists a gap between desired and existing solutions. The reason there exists is a lack of risk evaluation due to the fear of slowing possible innovation. Lemieux research states that this leads to overhyping the blockchain which focus only on its possibilities.

WHY BLOCKCHAIN FOR BANKING AND FINANCE INDUSTRY:

The main aim of financial institutions is to keep the money safe and to make secure transactions which require lot of mediators. The participation of these mediators makes the industry more expensive. Inspite of involvement of many people and manual process the errors and frauds always

increase. Blockchain aims to make secure transactions at low cost thus making the customer experience more satisfactory.

Blockchain enhances security incase of exchanging data, information and money. Since the system works on the transparent platform and at low operational costs it proves to be convenient for the users. These features make the blockchain a decisive and prominent solution for banking and finance industry.

KEY CHARACTERISTICS OF BLOCKCHAIN:

• Distributed ledger:

Copies of all information are shared on the block chain. Participants can independently validate the information without the need of a central authority.

• Digital signature:

Blockchain stores the information in the digitized manner eliminating the need for manual documentation and enables the exchange of transactional value using unique cryptographic hash.

• Cryptographically sealed:

The blocks which are created are cryptographically sealed in the chain which means it becomes impossible to delete, edit copy the already created blocks there by ensuring a high level of robustness and trust.

• Decentralization:

Blockchain eliminates the need of a central authority thus, creating a shared infrastructure by distributing control among all peers in the transaction.

• Immutable:

Once the transaction is recorded no participant in the blockchain can modify the transaction. If an error occurred while entering a transaction changes cannot be made and a new block has to be created.

• Disintermediation:

Blockchain enables transaction peer to peer transactions and make the transactions faster and cheaper by eliminating the role of the intermediaries.

TYPES OF BLOCKCHAIN:

Public blockchain:

Public blockchain are open sourced and are not permissioned. Anyone can participate in the network and can download the code thus it is possible to validate the transaction. Anyone can send transactions, read the transactions which means the transactions are transparent.

Private blockchain:

Private blockchains are not publicly trustworthy since the read permissions are restricted to an arbitrary extent by setting up groups and participants who can verify the transactions internally. Only the pre-approved entities can participate in the network.

Hybrid blockchain:

It is a combination of both public and private blockchain. Private part can be used for transactions among the biggest partners. Based on the permissions given they van view, transact and make changes. Public part is entitled to small partners or subcontractors and it would be an ideal solution which enhances trust.

III. RISK AND CHALLENGES

The major challenge is lack of awareness about this technology and its implications. The decentralization of a system is not obvious since it should have to offer more level of trust and safely than the current system. In order to execute this technology an enormous amount of computer power must be possessed by the system which is hectic and it must efficiently cope with the tremendous energy consumption that requires to support the system.

In extension it is haze how this system would confront with constitutional framework framework along with aspects of governmental security which includes scam, fraudulent activities, tax evasion, money laundering, terrorism.

If the usage of the digital currencies reaches a significant levels, unlike the current system it would not be exempted from the potential crashes. These impact could bring about precise risk and serious economic downturns. At this situation the present monetary policy would not be able to acknowledge forcefully, among the large share of economic agents when the digital currencies fails to boost demand.

Nonetheless, advancements and alterations in blockchain technology could overcome some of these hindrances that leads to vast recognition. As like other

industries, financial industry could also be transmuted by the blockchain technology well beyond the payment system.

USE CASES OF BLOCK CHAIN

Speeding upand simplifying cross border payments:

One of the issues that blockchain could resolve in payments is cross-border payments. Transfer of money from one country's currency to another is always slow and expensive process. For instance the transaction can also be made using services like western union but it is very expensive.

By implementing blockchain technology the process could be simplified by eliminating the middlemen in the transaction and make the transaction faster and more affordable. The cost of remittance until now were 5% -20%. The blockchaintechnssology would reduce the cost to 2% - 3% of the total amount.

KYC Regulation.

KYC regulation is a crtical policy and time consuming process for banks and other financial institutions which helps to identify the customers in order to eliminate money laundering activities and to reduce the financial crimes.

By implementing blockchain technology this saves lot of money and time for the financial institutions by verifying the customers independently and this verification is availed to all other financial institutions Since, every customer is documented in the blockchain network.

Trade finance:

Even in today's technological advancements financial activities such as commerce and global trade involves many paper work like documentation, invoices, letter of credit etc. though some of the order management system allows to carry all the work online which is a time consuming process. In such manual process a separate database must be maintained by all participants and if a error occurs that must be duplicated to all copies of the document.

Blockchain based trade finance knockout multiple copies and consolidates it in to one digital document. It creates link between banks, importers, exporters, government, shipping companies. A global trade finance platform was created byIBM, UBS and several other international banks (including Caixa, CommerzBank and Bank of Montreal) based on blockchain

Peer-to-peer transfer:

If a person wants to send money from one country to another there are certain limitations such as service charge, commission, geographical area etc. Blockchain has no such limitations and enables peer-to-peer transfer by eliminating the intermediaries and make the transaction faster and cheaper.

Elimination of fraud:

Even though there are technological advancements there exists a number of fraudulent activities such as cyber attacks, and the hackers steel the data.

In the traditional system data is stored in a central database which is very easy to hack. In 2017, the number of frauds in India through ATM cards and net banking totaled 1,785 (each amounting to 1 lakh or more). Blockchain eliminates the fraudulent activities by ensuring high level of security using a cryptographic hash i.ea digital signature.

A game changer in accounting:

At current scenario, the accounting practice is held manually by means of maintaining separate ledger for receipts, payments etc. Usually double entry system for all transactions. Auditing is done by internal auditor and to gain the trust of the outsiders a public auditor also verifies the transactions.

But when the blockchain technology is implemented it eliminates the need of the double entry system and follow a joint registration for all particulars thus saving cost and time. And the auditing is done automatically and thus ensures the integrity of files using a digital fingerprint.

IV. CONCLUSION

From this study we can draw a conclusion that blockchain technology could change the e-commerce platform over the next decade. It resolves all the issues faced by the sector not only in one stream but it has its multi-faceted potential to overcome all the struggles. It offers high level of security, transparency and interoperability thus making the system a shared infrastructure. Banks and financial institutions need to step forward to implement this technology in order to save time, cost and to make the system more efficient.

REFERENCES

[1] "Know more about blockchain: overview, technology, application areas and use cases," http://letstalkpayments .com/an-overview-of-blockchain-technology/.

[2] Anna Irrera, "BAML preparingBlockchain Powered Trade finance Test," Financial news, March 2016, http://www.efinancialnews.com/story/2016-03-01/bank-of-america-works-on -blockchain-trade-finance-tests.
[3] Wright, A & De Filippi, P.(2015): "decentralized Blockchain Technology and the Rise of LexCryptographia", Working paper, ssrn.com/abstract=2580664.
[4] "Financial institutions: Blockchain Activity Analysis," Lets talk payments, sept.7, 2015, http://letstalkpayments.com/financial-institutions-blockchain-activity-analysis/.
[5] Bank of International Settlements 2017. Distributed ledger technology in payment, clearing and settlement: An analytical framework. Bank of International Settlements.
[6] Pilkington, Marc 2016.Blockchain Technology:Principles and Applications. Research Handbookon Digital Transformations, edited by F. XavierOlleros and MajlindaZhegu. Edward Elgar
[7] Nakamoto, Satoshi 2008. Bitcoin: A Peer-to-peerElectronic Cash System
[8] Glaser, Florian 2017.Pervasive Decentralisationof Digital Infrastructures: A Framework forBlockchain enabled System and Use Case Analysis. In Proceedings of the 50th Hawaii International Conference on System Sciences (HICSS2017); Waikoloa Village, Hawaii, USA
[9] Bank of International Settlements 2017. Distributedledger technology in payment, clearing and settlement: An analytical framework. Bank of International Settlements.
[10] Beck, Roman, &Christoph M¨uller-Bloch 2017.Blockchain as Radical Innovation: A Frameworkfor Engaging with Distributed Ledgers. In Proceedings of the 50th Hawaii International Conference on System Sciences (HICSS 2017); WaikoloaVillage, Hawaii, USA.
[11] Beck, Roman, Jacob StenumCzepluch, NicolajLollike, & Simon Malone 2016. Blockchain –The Gateway to Trust-free Cryptographic Transactions. InProceedings of the 24th European Conferenceon Information Systems (ECIS 2016), Istanbu