Block chain

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Research Paper

Block chain in the health care Industry – an over view

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Abstract *- In this paper we have presented about the block chain in the health care industry. As it is an upcoming trend, we have discussed the components, functions, applications, implementation challenges and future road map. Block chain plays a significant role in sharing the patient data, drug supply chain, clinical diagnosis and pharmaceutical industry etc. As it maintains transparency and data integrity we can expect a steady growth in health care industry.*

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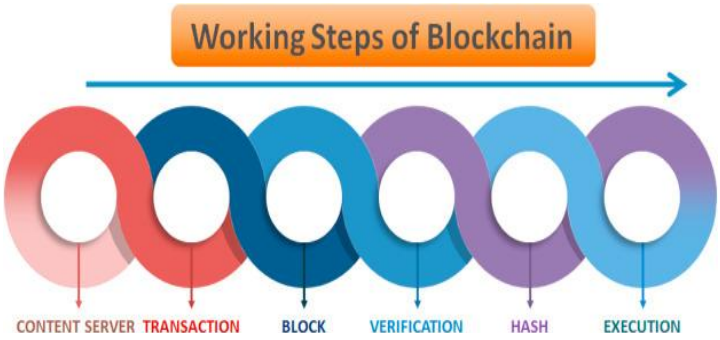
I. INTRODUCTION

Block chain is a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network. A tangible and intangible asset can be valued, tracked and used for trading purpose without raising the cost. Block chain network can be used in the health care industry to view the patient data, clinical diagnosis, pharmacy etc. This can easily identify the errors and avoid issues. In the health care industry, block chain will help in sharing the details of a patient, identify clinical diagnosis, plan the treatment options, and deliver cost effective treatment.

II . COMPONENTS OF A BLOCK CHAIN

Distributed ledger
This is a network where all have the access to the ledger and it also maintains the transactions. These transactions are immutable records and will be recorded once. It will help in eliminating the duplications.
Immutable records
The records are not rewritable and if manipulated it will be visible and recorded as a transaction.
Smart contracts
Smart contracts are the tools readily available and can execute the documents automatically. It is stored in block chain which plays a major role in corporate offices.

Block chain – Basic Function
Each transaction is recordable as block
Block chain helps in showing the movement of assets, it can be tangible or intangible will record all the data pertaining to the shift like why, what , whom, when , where and how much.
Block are connected one after the other
The blocks have the details of assets and the owners. These blocks forms a chain of activity and maintain the sequences. It will handle the line of transactions in a securable process and prevent any alterations done in between the existing blocks
Transactions are irreversible
Each time adding the block will strengthen the entire block chain by verifying the entire system. This helps in maintain the immutability which is the core strength of block chain. This helps in maintain the trust among the network



III. BLOCK CHAIN IN THE HEALTHCARE INDUSTRY

Blockchain has a potential to excel in community medicine and hospitals .The core strengths are ledger technology with data integrity. It helps in collaboration with the end users. Blockchain can build the strong team of health care, finance and payment which includes

- ✓ Cryptographic key access
- ✓ Data with proof
- ✓ Drug traceability

Application of block chain in the Health care Industry

In healthcare, Block chain has a wide range opportunities to grow

- ➢ Facilitating genetic code
- ➢ Patient medical records
- ➢ Supply chain

Healthcare-related applications

- ➢ E Prescriptions – can be tracked by using IoT and block chain
- ➢ It helps to **schedule acquisitions** which helps in preventing disruptions and shortages in the pharmacy, small nursing homes and other health care organizations
- ➢ The perfect deployment of **digital frameworks** will avoid unnecessary confusions and streamline the process flow
- ➢ It builds the trust among end users and prevent mishandling of records, payments and medicines
- ➢ The technology can effectively **improve** the condition of patients with low cost
- ➢ As block chain requires multi-level authentication , prevents errors and mishandling and obstacles
- ➢ This technology has made the process simple , transparent , easy and permit the patients to use the health record
- ➢ It will help in tracing the legal drugs and safely exchange the patient details
- ➢ Patients may require a consent when they move to medical practioners

Block chain plays a crucial role with the help of artificial intelligence and Machine learning and it will be an indispensable tool in the health care industry especially pharmacy, patient records and Finance.

IV.IMPLEMENTATION CHALLENGES

Practical difficulties in implementing the block chain in the health care industry specifically data sharing, patient information, access information, consent, drug supply etc. However, to achieve those a robust system should be in place to meet and strengthen

Challenges may be

1) **lack of data interoperability**
2) It needs an **agreement between two parties** especially patient and the instituition which may complicate the regular process
3) As it replaces the traditional methods need **a strong communication** among the end users for the successful implementation
4) The health care community may show **resistance** as they are not technically sound
5) Creating **awareness to the public** must be made mandatory and educate them to use the technology
6) I**mmutability of blockchain**
7) There is also a **chance of potential malicious actors** to mislead this

Blockchain cannot manage this risk; only governance, regulation and enforcement can.

This concerns not only the mechanisms concerning privacy, security and consent but also those dealing with communication, engagement, education and the fostering of trust among stakeholders

V.CONCLUSION

Blockchain technology can transform the health care with the support of IT as a centralized system. For this transformation to occur, healthcare leaders, government officials, payers, and tech innovators will need to unite together to enforce. Future road map may be Block chain used as Fit for the purpose, aligning with the government regulations, Slow and steady integration, Education and awreness for the end users will yield a better results.

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