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Blockchain Research Paper

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ABSTRACT

The blockchain is a technological innovation that will have a profound impact on our business environment in the coming decades. It will change how business processes happens today and how It will be done in coming future also having great impact in the economy. Blockchain keeps the record of the data security, integrity and transparency.
Till date the research related to blockchain is around the cryptocurrency like bitcoin and very less research regarding the other applications of blockchain technology in the other sectors. But in this paper, we will try to mark light on the other applications and challenges of blockchain technology.

INTRODUCTION

A blockchain is system or database which records and stores the information from different computer and nodes. Blockchain keeps the record of the node and is a list of records and transactions that happen digitally. In blockchain each node is linked with upcoming node in the form of cryptographic signature, in a linear chronological order. As each node contains an image of the last record as last node is added in the record and it is linked with other nodes in network, which use the system to confirm and validates the transaction.
Blockchain uses the innovative and unique way to distribute data in a secure way. Blockchain eliminates the third-party instance in this there is a direct transaction between the two groups. Therefore, Blockchain can only be updated with an agreement between participating parties, and transactions cannot be modified or deleted. The database cannot be hacked or manipulated as in traditional database it can be done because in blockchain data is not stored in single place it is distributed everywhere. The data on the Blockchain is immutable.

The Concept of Blockchain Technology

A blockchain technology is a list of records that are secured and connected using cryptography. Blocks is a list of records that contain a hash code of the last block at the time at which transaction occurred, which are designed so that they are not modify and deleted. Blockchain technology is also known as Distributed Ledger Technology is a list of records recording system that contains all the data about the transaction that occur. It records the transaction in secure, effective and low cost.
The characteristics of blockchain technology are the data is stored at different places, also provides security to our database, provides efficiency to the database, it has flexible and reliable program features and it is budget friendly.

Types of Blockchain

Some common type of blockchain has different types of pros and cons allowing them to fulfil the requirement of different application.

Public Blockchain:

It is blockchain in which transaction can happen opaque and unnamed way which makes it more suspicious that who is doing this transaction how is it managed. A public blockchain, like bitcoin, ethereum and etc, does not have single administrator. There is no single point of failure based on the agreement of between the user. It is very easy to attack on the public blockchain.

Private Blockchain:

In private blockchain transactions are not known to each other, the data cannot be found in any public accessible area, but in this each member is known to each other**.** A participant cannot read or write the Blockchain in a private Blockchain network unless they have permission or an invitation to do so. It is more secure and reliable as compared with the public blockchain.

Consortium Blockchain:

In consortium blockchain is a different type of model that work with public and private blockchain together. Using this model, companies and groups can create a private blockchain to transfer or share the data among the institutions such as banks, organizations, and firms.

Applications of Blockchain Technology

Smart Contracts: -

In smart contracts are computerized protocols that enact the terms of a contract. It is written in the form of code which can be executed in the blockchain compiler or environment. Hence the agreements are frequently referred to as Smart Contracts in the IT environment.
Smart Contracts, which are automatically executed without human intervention, are one of the best applications of this technology. With smart contracts, repeat transactions, or transactions of a certain importance, can be automated

Blockchain Technology for e-Government: -

It is a technology that records the data in different places that cannot be known easily, it helps government to improve their working process and builds a trust among the public transactions. It provides different tool to enhance the cellular and reducing corruption in the budgetary process. Both blockchain technology and smart contracts can be performed on e-government. It reduces the use of the hard copy.

Blockchain Technology for Financial industry: -

Blockchain is a foundational technology that could drastically change the cost of transfer and it will also explain economy in new way. According to the Harvard business blockchain technology will change in the way that the internet does to the media. Bitcoin, the most popular decentralized digital currency, was initially developed as the backbone of blockchain technology. Financial transactions and banks may benefit from blockchain, which is capable of solving money problem in all possible way, database and transaction exchange. Banks and institutions related to banks can handle more crucial information through blockchain offering to reduce risk and increase security. Blockchain plays a crucial role in financial settlements and improves financial statement's reliability

Blockchain technology for real time accounting: -

Digitalization in accounts environment is at very early age or it is just a starting, while some organization will have the different places to save data that is one of the advancements of blockchain technology. Auditors will increase their audit efficiency by reducing the cost of maintaining, creating a highly secure system, and reconciling the recorded by using blockchain technology. By utilizing blockchain, audit trails

will be traceable, accounting will be automated, asset ownership will be tracked, and transactions will be authenticated.

Advantages of Blockchain Technology

Data integrity:
It is Immutable in nature and the people can make less cheating among the space creates regulatory among the data. As the data gets recorded than no one can delete the data until the agreement is done by two groups

Security:
During every transaction, a single unique alpha numeric signature is recorded corresponding to every transfer that happens. All transactions that happen digitally timestamped with a cryptographic hash code.

High availability and Accessibility:
Due to decentralized networks, it can easily finish or complete data timely and accurately with the help of blockchain technology.

Transparency and Consensus:
Those transactions that are conducted through Blockchain Technology are transparent by a counterparty and can be audited at any time.

Disadvantages of Blockchain Technology

Cost issues: The starting costs of Blockchain Technology and it cannot be used for free, which is the drawbacks of decentralization.

Data malleability issues: In the Blockchain implementation, there is a potential issue of data malleability. The signatures do not guarantee ownership.

Latency issues: In Blockchain implementations, time is one of the most important issues, since the complex verification process makes it unsuitable for large transactions**.**

Immaturity of the Technology:
This is a new technology that shows a decentralized network and empowers organizations by transforming strategy, structure, process, and culture, among other things. In conclusion, Blockchain adoption may result in organizational change, including changes in strategy, structure, and processes. The organization needs to undergo this transformation with members' cooperation and commitment if it is to survive and improve its performance and effectiveness.

Conclusion and Recommendations

According to the literature review, Blockchain Technology is very promising from a theoretical perspective for resolving problems associated with immutability, security, removing fraud, creating trust and maintaining privacy. This technology will create a great impact industry such as finance, business process management, insurance, accounting, entertainment, trading platforms, healthcare, e-government, internet-of-things, and law firms. A result of blockchain technology gives a different solution and has more potential than any other technology, that depends on the field or organisation where it is implemented, since it offers economic efficiency and social benefits.

References

Ahram, T. et al., (2017). Blockchain technology innovations. 2017 IEEE Technology & Engineering Management Conference (TEMSCON).

Bahga, A., Madisetti, V., (2016). Blockchain Platform for Industrial Internet of Things, Journal of Software Engineering and Applications, No. 9, pp.

Bahga, A., Madisetti, V., (2014). Internet of Things: A Hands-On Approach, Atlanta.

Forrest P., (2016). Blockchain and non-financial services use cases.Linkedin.https://www.linkedin.com/pulse/blockchain-non-financialservices-use-cases-paul-forrest.