

BLOCKCHAIN TECHNOLOGIES: THE FORSEEABLE IMPACT ON BUISNESS ENVIRONMENT

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Abstract— This paper is about the Block chain, which is a chain of blocks. Block chain is a technology which records all the transaction based data and the data stored is secure and unalterable. The components that mainly constitute block chain technology are shared ledger, smart contracts, privacy and trust. The following sections explain the working principle of block chain in some real time problems keeping in mind the above mentioned components. The application of Block chain includes safe and fast transaction of data among companies which can be in the form of contracts, crypto currency and many more. The validation of data was taken into consideration to explain the approach of block chain in handling sensitive data.

Keywords-ledger, smart contracts, crypto currency, trust, hash.

I. INTRODUCTION

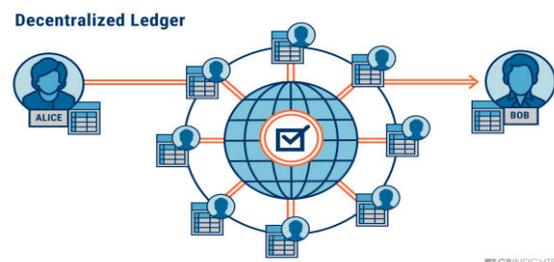
Block chain, as the name suggests is just a chain of blocks. So, here chain in literal sense means the public database and by block it means the digital information. Each block contains multiple verified transactions[2]. Blocks contain a secured hash, which is generated taking into account the index, timestamp, data inside the block, and the hash of the previous block. Blocks in the block chain are made up of digital fragments of information and they have three parts which includes : 1) Blocks store information about transactions. 2) Blocks store information about who is participating in transactions and 3) Blocks store information that distinguishes them from other blocks. Block chain is an emerging technology that can radically improve banking, supply chain and other transactions and can create new opportunities for innovation Businesses include networks of

individuals and certain organizations that collaborate to create value and wealth. Block chain is a decentralized, dynamic, distributed and public digital ledger that records transactions across a number of systems. And recorded data cannot be altered or modified at any cost. It removes cost associated with intermediaries and risk of fraud and tampering. Block chain network has no central authority which means it is a pure definition of democratized system. Since it is a shared ledger, the information in it is open to all. Hence, anything that is built on the Block chain is by its transparent nature and everyone involved in it is accountable for their actions. Business network is one of the fields that can be benefited with the implementation of block chain technology to a larger extent.

II. COMPONENTS

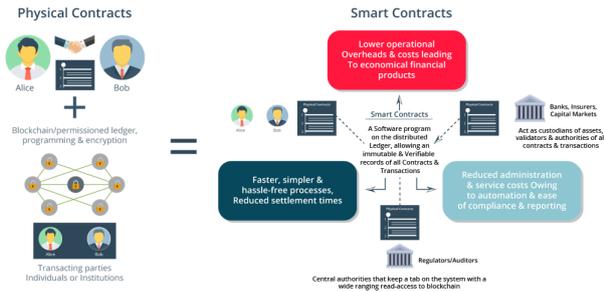
A. Shared Ledger

The shared ledger records what assets are transferred around the business network and all the participants in the business network have their own copy of the same. The concept of permissioning in the block chain network so that we can actually control who can see what parts of the ledger and it becomes a shared system of record across the business network.



B. Smart Contract

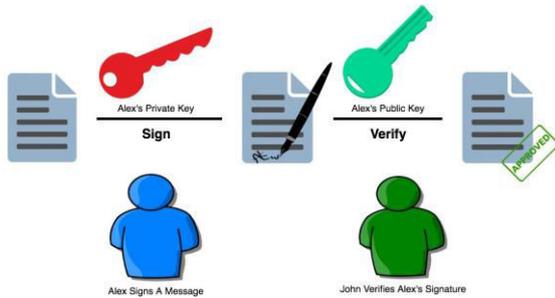
Smart contracts are the way of encoding and sharing the shared business process across the business networks. The contracts themselves are the smart contracts as they are produced by taking the English contract and encoding that into the computer readable language. The contract will also be verified and signed when they are distributed across a business network.



C. Privacy

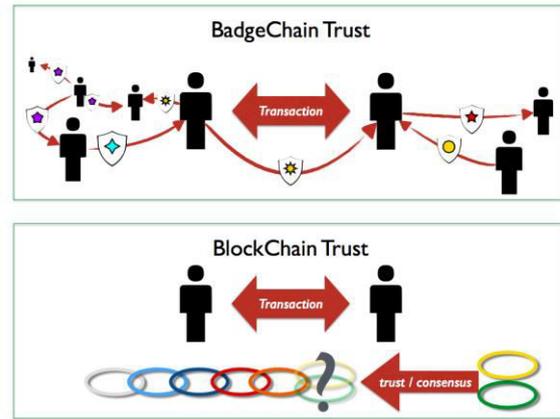
Participants involved in the business networks need appropriate confidentiality between subsets of participants. Transactions need to be authenticated.[3]

Digital Signature



D. TRUST

Participants endorse transactions, which means business networks decide who will endorse transactions. Endorse transactions are added to the ledger with appropriate confidentiality. Assets have a verifiable audit trail i.e. transactions cannot be modified, inserted or deleted.

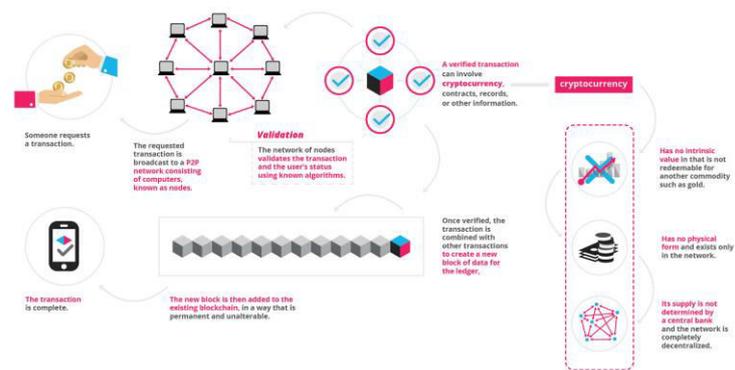


III. WORKING PRINCIPLE

If there is any kind of request or transaction, the requested transaction is broadcast to a P2P network consisting of computers known as nodes. The network of nodes validates the transaction and the user's status using known algorithms and this process is the validation process.

A verified transaction can involve crypto currency, contracts, records or other informations . Once verified, the transaction is combined with other transactions to create a new block of data for the ledger. The new block is then added to the existing block chain, in such a way that it is permanent and unalterable.

Hence, the transaction is complete.

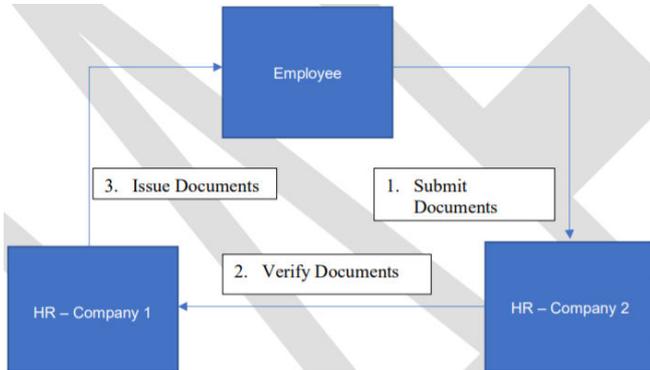


IV. REAL TIME APPLICATION

A. Problem Statement

Verification of the details of the employee migrating from one company to the other. The verification of the details given by the employee to company B will be verified by the company in

which he was workin in the past i.e company A. Blockchain technology is the most appropriate way of solving this problem as it doesn't require ant intermediate agent for the verification of the documents.



B. Solution using Blockchain

- System admin

1. Create company:

System Admin will create company.

Key fields	Field Description
Company Information	User can assume basic information about Company to be captured like - Name - Address

2. Create company admin user:

System Admin will create company admin.

Key fields	Field Description
User Information	Capture few key information about the user
Role	As of now there is only one role (Company Admin) but in future we may have multiple roles.

- Company admin

1. Manage users:

Company Admin will Manage user and assign role.

Key fields	Field Description
User Information	Capture few key information about the user
Role	As of now there are two roles • HR • Employee

2. Manage employee record:

Company admin will create employee record which will be used in the system.

Key fields	Field Description
Start Date	Starting date of the employee.
End Date	Ending Date of the employment
Position	The position that the employee was working in

3. View verified employee record:

Company admin should be able to view verification of shared employee records.

Key fields	Field Description
Employee Record	Shared employee record

- Employee

1. Share employment information:

Employee should be able to share employment information with other companies

Key fields	Field Description
Target Company	The company to share information with

V. FUTURE SCOPE OF BLOCKCHAIN

A future where e-com, online betting, dating and what not is booming like anything. The safety and security is something everyone will consider before making any move. Furthermore, the features of the block chain technology is so futuristic, that its implementation(s) will not only help the financial system, it will help almost every field where internet exists, or can be implemented. Examination, voting, data storage, social media are a few areas of implementation to name a few.[1]

VI. CONCLUSION

As far as the present is concerned, the block chain technology is severely underrated technology. Just one application of it (crypto currencies) has uprooted the industry already (as per stats, crypto currency is over \$9 bn market already). In other words, crypto currencies have become a mode of investment. Furthermore, the world isn't seeing crypto currencies as the mode of primary payment, yet. People, including me, have mixed reviews about crypto currencies. One side it is 100% anonymous, on the other side, it is dangerous to imagine the black market, illegal bodies, and terrorism using this mode to fund themselves. However, it is in the distant future, as of now, the

world is enjoying the investment they've made so far. Or, making investments and trading right now.

REFERENCES

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- [2] <https://tech.economictimes.indiatimes.com/news/technology>
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- [4] <https://in.search.yahoo.com/search?fr=mcafee&type=E211IN826G91208&p=WORKING+PRINCIPLE+OF+BLOCKCHAIN>