

Blockchain Technology has the Ability to Change the Face of New Business

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Abstract: Block chain Technology first emerged as the system underpinning bit coin, it is also known as distributed ledger technology (DLT), a shared record of information that is maintained and updated by a network of computers rather than a central authority. It is protected and secured by advanced cryptography. At basic level block chain is a digital platform for recording and verifying transactions. User A wants to send money online to user B this transaction is called a block, this block is broadcasted across the transaction network for verification by Peers, the peer-verified block is added to an unbreakable, un-hack able "chain of other verified block. This chain provides a transparent record of transactions, now that the transaction is verified and recorded, the money moves from user A to user B. This paper will help you understand the technology and visualize its business implication in the present & future.

Keywords: Block chain, Block, Bit coin, DLT and Cryptography

1. Introduction

BITCOIN is not how BLOCKCHAIN is spelled.

Blockchain are incredibly popular now a day, like the name indicates the Blockchain is a chain of blocks that contains information validated by its peers who are independent miners around the world who add the blocks to their chain for future references this is a decentralized process of authentication which creates transparency around the world.

Approximately we have more than a million computers around the world who validated such transaction. This idea was originally described in year 1991 by a group researcher intended to timestamp digital documents so that it cannot be backdated or tampered like a notary! However, it went unused until it was adopted by Satoshi Nakamoto in 2009 to create a digital crypto currency called Bitcoin.

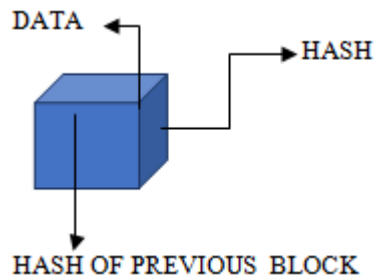
Our agenda is to understand how this technology works and how business can take advantage of such game chaining technology.

2. Objectives of Study

As we all know blockchain works on the bases of (DLT) distributed ledger technology which is open to anyone, they have a very interesting property like once the data is

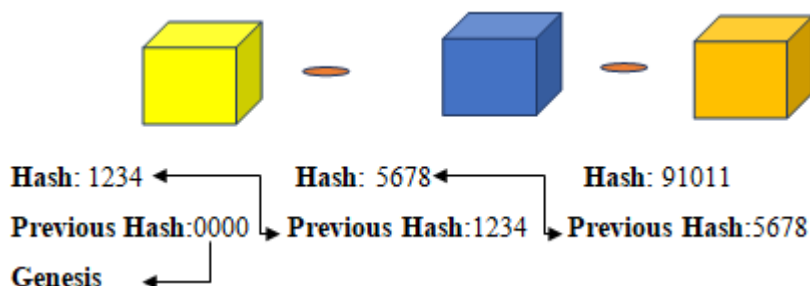
recorded in the blockchain it become very difficult to change it.

Let's take a closer look at a block to understand more



Block is made up of three components

- 1) DATA
- 2) HASH
- 3) HASH OF PREVIOUS BLOCK
 - a) Data means information stored in the block for example in context to Bitcoin transaction the information stored would be sender, receiver and amount of money sent.
 - b) HASH- you can compare hash to a retina or finger print used to identify a block and its contents which is unique just as a fringe print once a block is created the Hash is calculated, changing something inside block will cost the Hash to change if the fingerprint changes it not the same block.
 - c) Hash of the previous block this creates a chain of block, this technique makes the block more secured.



The above example diagram of a blockchain will help you understand how chain is created and its tracking mechanism. Every block has two hash one created when the transaction is added to the ledger and the other is of the previous block so that it forms a chain.

The first block will not have any previous reference of block as that is where the chain started, and it is called the Genesis. Say someone had tampered any data in the second block a new Hash is created this change will affect all the blocks and make them all invalid cos they no longer store the hash of the previous block.

But using Hash is simply not enough to prevent tampering. Computer these days with more processing capacity can calculate hundreds and thousands of Hash per second which means you can effectively tamper with the blocks and recalculate the entire chain to make them valid again.

To mitigate this, the blockchain has something call **Proof-of-work**, it's a mechanism which slowdown the creation of new blocks in Bitcoins it takes 10 min to calculate proof-of-work and add a new block to the chain this process makes it even harder to tamper with the block cos if you tamper with one block you need to recalculate for all other blocks in the chain as well.

So security of the blockchain comes from creative use of Proof-of work and hashing but there is one more way block chain uses to secure themselves and that is by being distributive instead of using central entity to manage chain, Blockchain use P2P Peer to Peer network where anyone who wish to join gets the full copy of blockchain as and when a new block is created it is distributed to the all the people in the P2P network so that it can be validated and if everything is ok each of them add the validated block to their own chain.

So, all the validated transaction or chain create a consensus where tampered would be rejected by other nodes so to successfully tamper with the blockchain you need to tamper with all the blocks in the chain and redo the proof-of-work and take control more than 50% of P2P network only then will your tampered block will be accepted by everyone else, so this is almost impossible to do. As you all know Blockchain is evolving and one of the recent development is Smart contracts which are simple programs that are stored on the blockchain which are used to automatically exchange coins based on condition.

3. Business Implication

We all know that blockchain technology is successful when it comes to Bitcoins the \$ question is can this technology be implemented in any business area. Let's understand if we really need to have such a technology integrated in the business and what would be its pros and cons. Change and resistance to change are the two things that can make or break the future of the organization. For the organization to sustain and grow in the long run they need to adapt to the present market trend and incorporate the newest of technology in the market, which will give them a

competitive edge over others not only that but also give the opportunity to take advantage of the maturing market.

Advantages

- 1) **Security** – A site is protected and secured by advanced cryptography, Hashing, proof-of-work mechanism and P2P (Peer 2 Peer) network authentication.
- 2) **Transparent** – It creates complete transparency as it uses P2P network where every person in the P2P Network has a copy of blockchain a tampering would be easily identified.
- 3) **Eliminates Audit** – By adapting this technology where each block of information is validated before adding to the chain through peer 2 peer consciences and future changes tracked audit can be eliminated.
- 4) **Faster transaction** – interbank transactions can potentially take days for clearing and final settlement, especially outside working hours. Blockchain transactions can reduce transaction time to minutes and process 24/7.
- 5) **Decentralized** – As this technology is decentralized individual influence for person gains are eliminated.
- 6) **Low transaction cost** - it would drastically bring down the cost of operation thus can minimize the transaction cost.
- 7) **High quality data** – Blockchain data is complete, consistent, timely, accurate and widely available.
- 8) **Empowered users** – Users are in control of all their information and transaction.

Drawbacks

- 1) **Performance** – Because of the nature of the blockchain, it will always be slower compared to the centralized database, a block must do all the same things as a database but in addition to it the transactions need to be verified.
- 2) **Energy consumption** – for example the bitcoin networks miners are attempting 450 thousand trillion solutions per second in efforts of validation a transaction, which uses substantial amount of computer power.
- 3) **Cost** – Block chain offers tremendous savings in transaction costs and time but the high initial capital cost could be a more.
- 4) **Control, security and privacy** – While solutions exist with security there are still cyber security issues which must be explained to the public to entrust their personal data.

Looking to the future potential uses of blockchain below are the few lines of business which can be transformed.

- 1) Financial instruments and trade identification
- 2) Data delivery
- 3) Payment system
- 4) Land registration
- 5) Contract law
- 6) Identity verification

The one that interested me more is the application of this technology in land registration as it can eliminate property fraud. Property fraud is one of the biggest problem in India. In 2013, New Delhi alone had 181 reported cases of property fraud while Mumbai came a close second at 173 cases.

In, what stands as a truly monumental decision, Andhra Pradesh and Telangana are partnering with Swedish start up ChromaWay to counter these property fraud cases by applying the blockchain technology.

Property Fraud and Black Money

Real estate is one of the biggest avenues of investing black money.

Most popular way to do it is buy property in others name this is called benami system also known as false name as of 2016 the benami property is worth over \$282 million.

The three main problems block chain would solve are as below

1) Digital unites should not be easy to replicate –

As the ChromaWay land registry whitepaper observes any unit which is of immense value should be extremely hard to replicate. This is the reason why fiat currency can't be easily replicated at home. If someone can take home a printer and print out \$100, the value of the currency would go down by a huge amount. The same should go for confidential documents like land registry papers as well. It shouldn't be possible for someone to have two copies of the same registry but with different details. The blockchain has solved this problem years ago. This problem is called "double spending". Let's take bitcoin's example, it is impossible for me to spend the same bit coin simultaneously in more than one transactions.

2) Digital Files Should Be Tamper Proof-

Another problem that should definitely be solved when it comes to storing land registration files is to make them as tamper proof as possible. Back in the day all these files used to be physically stored in registers, this obviously brought in a host of problems.

- Anyone can steal the registers.
 - It is very simple to bribe someone to tamper with the records.
 - Registers are susceptible to wear and tear.
- Even when the system was made digital, certain problems still persisted.
- The system could always be hacked.
 - The bribe angle still remained. Anyone could bribe an official and make them change the records.

What was needed was a system that could store all these files and make them "non-tamper able" so to speak. One of the most fascinating aspects of the blockchain, which this author feels could help fight corruption in different industries, is the simple fact that files once stored in the blockchain cannot be tampered with. Each block in a blockchain has its own unique digital fingerprint called "hash". Once the files go inside a block, they cannot be tampered with because the cryptographical hash functions will prevent that from happening. Imagine this, a file once stored, can be viewed by everyone (since the blockchain is an open ledger) and not be tampered by anyone, including the file creator.

3) Digital Processes Should Be Tamper Proof-

The third problem that the blockchain can fix is securing a trustless process.

Every official institution has a process for each and every activity, but they may not be strictly adhered to. This could happen for a number of reasons:

- General human negligence.
- Malicious intent.

As you can see, these problems are both human related.

In order to secure something as important as land registries, a set process should be followed which cannot be tampered with. A lot of actors need to follow certain steps every single time to ensure the safety of the process and to eliminate any corrupt human behavior.

The blockchain pretty much solved this problem a long time back through "consensus mechanism". Think about it, a blockchain is a distributed system with a large number of actors. In order to make any decision, all these people need to come to a majority consensus, how do they do it?

There are several mechanisms that help them to achieve so such as Proof of Work, Proof of Stake etc.

The main takeaway is, a blockchain can ensure a seamless, secure data storing process which is free from human emotions.

So, as we can see, using the blockchain technology will produce an easy and innovative solution.

4. Conclusion

This paper has tried to document how Blockchain technology works and how such technology can be used to solve the current problems through the business implication, Blockchain technology could be quite complementary in a possibility space for the future world that includes both centralized and decentralized models.

Now as future social entrepreneur we need to use this as an outline and come up with effective solutions to solve the global problem making the work a better place to

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