



A Study on Blockchain Technology Makes Inroads Into the Stock Market of India

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Abstract- Blockchain technology is one of the fast growing technologies used for the financial sector now days. Financial information is very sensitive and always organizations try to keep them secret and secure otherwise it can create a big loss and hazard. Stock market is most important financial sector that works on two concepts; one is to increase the profit and second is to reduce the risk. In this research paper I try to discuss how blockchain technology is gaining importance in stock market. Mainly blockchain will help us to make optimal stock exchanges through automation and decentralization. Across the globe in each and every sector blockchain technology make inroads, so stock market also. Some of the country is still preparing them to use the blockchain technology. This Technology offers a big amount of security especially in financial sector dealing in money matters with customers.

Keywords—stock exchange; blockchain; decentralization; smart contract

I. INTRODUCTION

Blockchain defines as a distributed immutable ledger that contains all the transaction, which has been executed (Yaga, Mell, Roby, &Scarfone, 2018). Blockchain technology has become more popular because of using crypto currencies like Bitcoin. This distributed ledger has many merits as it can keep the records and transactions in between two parties transparent, secure and immutable.

In last few years blockchain technology is gaining tremendous importance in financial sector. It is expected that in near future Blockchain technology will change the business processes. Like other financial sector Stock Market also believes in the use of blockchain technology. Bitcoin the best example of the use of blockchain technology as it is a digital currency that enables users to transfer currency without the intervention of any central regulatory authority. Blockchain technology is providing many digital transactions.

Stock Market is highly volatile market and different types of risks are existing there. Some risk can be diversified but some can't or non-diversifiable risks. Predictions and the probability are the two-facet coin of share market. In the prediction market investors are always concern about the future events of the Companies, Industries and the Economies like weather, elections, future market of the new product, demand and supply, relation with neighboring countries, fiscal and financial policies of the government etc. This prediction market will determine the move of the investors.

Although there area few real world prediction markets that have been successfully brought to the wide public, the good quality of prediction about the future probability, which makes them interested into it. Blockchain technology is proved to be a big tool in the prediction market and it helps them to make secure predicted market. The strongest point of the technology is smart contract through which no mediators or central authority investors can transact, no one know who sends what to whom. This reduce the use of central authority- improving security, therefore use of blockchain technology in Stock Market for prediction purpose is an innovative idea.

II. BLOCKCHAIN MARKET WORLD WIDE

The predictions aim that the blockchain technology will face massive progress in the years to come. The market growth as per the statistics shows that the hike will be more than 23.3 billion U.S. dollars in scope by year 2023 (Fig.1). One of the rapidest initiatives is taken by the financial sector for investing in blockchains as more than 60% of the market percent of the market value focuses on new technology.

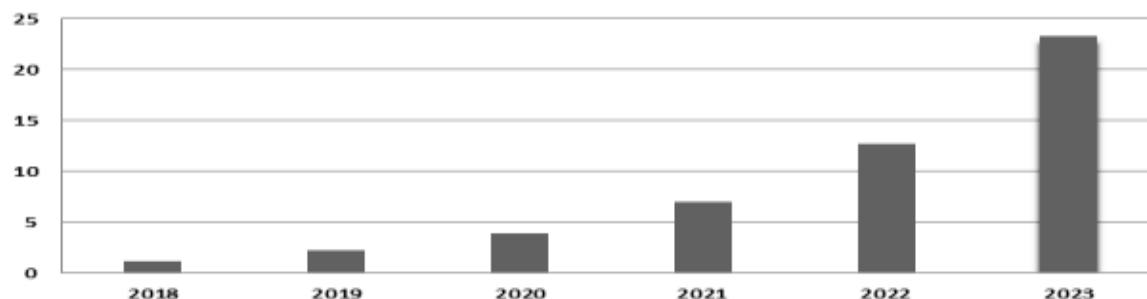


Fig. 1. Size of the Blockchain technology market in Billion US Dollars

III. FUNCTIONING OF BLOCKCHAIN TECHNOLOGY

For the start of blockchain there must be a transactions. These transactions are then confirmed and stored in the next block. After the exact confirmation and verification on the transaction it will be highlighted by the green light and a unique identification code will be generated known as "HASH", this hash will be used in the recent Block. And finally this Block will be added in the chain. Once it will be added, everyone can view it by this if the consumer wants to see, they can connect their computer to the network of blockchain. It will automatically update the blockchain whenever new block is added in it.

Each and every computer system which is a part of this technology network has a copy of its own, which means that the blockchain having a lots of copies of its own. Though there are lot of copies and information are available still it's difficult to hack or manipulate it because all copies are automatically changed in the blockchain network. In spite of all information is visible to the public still Blockchain technology is more trusted and secure in comparison to others. All blocks are added in a systematic manner and formed a chain. Once the block is added into the chain it will be impossible to go back the previous block and change any information because they have already a "Hash Code" which is created by the mathematical algorithm that change all digital information into a sequential alphabets and numerical digits. If anyone tries to edit any information in the previous block, Hash Code will change. Though it is very difficult and impossible to go back in the previous block and change any information. Therefore blockchain technology is most secured trusted and useful tool, which is used by the Stock Market Sector. Now we have understood from the above mentioned blockchains may support in storing data on monetary transactions

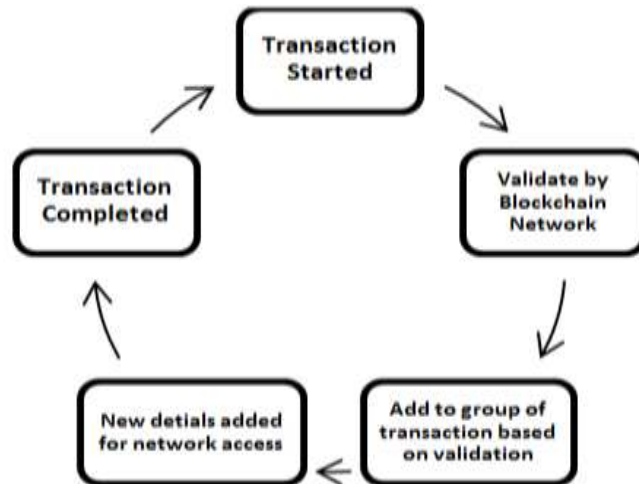


Fig. 2. Adding Transaction in Blockchain Network

The idea of blockchain inventions is the mixture of many sub procedure, like Algorithm Cryptography, computer science, and monetary model, to form the one system of blockchain

IV. BENEFITS OF BLOCKCHAIN TECHNOLOGY

The rapid growth of blockchain technology in financial sector across the globe increases the importance of this technology in stock market too. The Security and Exchange Board of India (SEBI) is trying to study how the market can fully utilize this blockchain technology for getting good results.

Recently, SEBI selected an advisory committee, called Committee on Financial and Regulatory Technologies (CFRT), for conducting research on the blockchain program and other technologies that have been building effects in the sphere of asset management post-trade settlement and fundraising.

Blockchain offers enormous prospective for tracing securities lending, repo and margin financing and monitoring systemic risk. Many countries are using and planning to use this technology to make the data secret and secure. Like in 2015, Nasdaq revealed the use of its Nasdaq Linq blockchain ledger technology to successfully complete and record private securities transactions. Japan's Financial Services has also allowed the Tokyo Stock Exchange to use blockchain technology.

4.1 Modernization of post-trade events: With the help of blockchain technology and smart contract in post trade activities there will be no use remain of intermediaries, it reduces counter parties in the contract and reduce the operational risk too. It also helps in faster trade settlement. Financial Institutions can easily settle down all transactions in securities with in a minute instead of days, with the major benefits being streamlined real time settlement, it increase the transparency, enhance liquidity and supply chain. Blockchain can offer a solution to the post-trade events processing to maintain a single source of truth jointly owned by all participants in the system.

4.2 Mechanism for fairness and transparency: Blockchain technology increase the transparency in the transactions because of less involvement of intermediaries. All details are available for both the parties without any delay. It creates a fair and transparent environment in the financial market.

4.3 Lower transaction costs: Blockchain technology lower down the transaction costs also because no intervention of intermediaries so no commissions or brokerage to them, it ultimately increase the profits of the investors too.

4.4 Mechanism for risk containment: In the financial market there was always a chance of risk because of human errors and late in transactions but after the invention and adaptation of blockchain technology the human error risk reduce to the level of zero.

4.5 Higher liquidity: Blockchain technology helps in the market to maintain liquidity by adopting fast, fair, transparent and low cost transactions.

V. LITERATURE REVIEW:

Blockchain technology is widely accepted and used by many areas of industries. Many scholars are studying the different aspects of blockchain technology applicable in theoretical and practical world. The application of blockchain technology in Indian stock market is one of them. Scholars, using the methods of event analysis, regression analysis and so on, have studied the impact of the application of developing technologies on the value of the company's stock. In the opinion of Maher Alharby, the functionality of smart contracts assists to implement separate orders automatically upon the agreements also examines the present status and its usage of smart contracts onto blockchain technology which supports various unknown partners to enter into business dealings. (Eg; Ethereum Blockchain)

In view of H. Yining et al, stated that, smart contracts are getting into minds of many in the present era, introduced into public and private sectors as they give a feasible platform for them to operate in public and permissioned blockchains this in turn increase efficiency, encourage firms into transparent dealings.

Chriss Dannen compares the revolution of the blockchain technologies with the one brought by Ted Nelson through the HTTP concept in 1965

VI. ISSUES AND CHALLENGES WITH BLOCKCHAIN BASED CONTRACTS

There is no doubt that the importance of blockchain technology is increasing day by day and most of the sectors adopting this new technology because of increased transactions securities and reduced risk of manipulations in the records but still this new technology rise the legal and regulatory challenges that are difficult to understand by the regulators.

The financial market still confused about which blockchain technology will be useful for the capital market and up to what extent. The use of blockchain technology also brings some different kinds of risks in the system.

VII. THE ROAD AHEAD

While the market monitors potential regulatory developments, efficient governance is the key to the effective implementation of blockchain to protect participants, stakeholders and investors while ensuring that the system is strong in the face of systemic risk, privacy concerns and cyber security threats.

Blockchain has the potential to disrupt the financial services, particularly in automating market surveillance events processing and in automating post-trade events processing.

Blockchain technology promises to reduce the problems of data fragmentation, loss of data, reconciliation and ticket matching.

Still the full potential value from restricted mutual distributed ledgers and smart contracts will require for the changes in business processes and investments from firms, virtually from the sell side and buy side of the industry.

VIII. CONCLUSIONS

The importance and achievements of blockchain's decentralized and undiscriminating nature cannot be overlooked. It is promptly visible that the blockchain technology is adopted in all over the world and the use of this technology in stock exchanges is increasing day by day. It's a growing technology, which becomes the backbone of the stock trading and financial market but still there are some issues of blockchain projects are currently needs to be tackle wisely. However, the excitement being shown at this stage for a technology that is set to considerably convert the finance industry is certainly helping to improve the core infrastructure of stock exchanges, therefore it really improving transparency and efficiency. As such, many exchanges are now starting to reap the benefits of this new technology. In India this technology is adopted by the stock markets to make the things better while trading and gives full returns to investors into the market.

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