Impact of Blockchain on Stock Market

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Abstract
This paper mainly intends to exhume the impact of blockchain on stock market. It applies literature review approach to gather information from different sources. The study observes a potential paradigm shift in this sector which will remove unnecessary intermediaries, ensure utmost transparency and security, and reduce the post transaction settlement time. It will also facilitate starts up to raise their capital through smooth security tokens. People will be able to participate in different meetings from remote places through this technology. Since blockchain comes with several adverse impacts, author recommends a collaborative approach to implement this technology for the overall benefits of the society.

Keywords: Blockchain; Flexibility; Ledger, Speed; Transparency

Introduction

The consequence of technical progress on the welfare of workers has been a matter of debate for a long time. Over the last few decades, innovations in technology have arose and they have affected the society in many ways. The Internet has changed the nature of services and living standard of people in various ways (Saint-Paul, 2008). The blockchain technology is one of the new technical innovations currently evolving. Briefly it is a technique providing registration of any kind into a distributed database architecture referred to as a ledger (Pinna & Ruttenberg, 2016; Chowdhury, 2012). The blockchain technology allows networks to become more decentralized and it can curtail transaction times. It is likely that the blockchain technology will affect the capital market, a large global industry. The capital market has been doing business electronically for many years. But the businesses within the market also involve many information transfers manually and paper-based. There are several reasons for the continued adherence to traditional paper-based method; both aversion from customers and regulatory statues affects the usage (Mulligan & Gordon, 2002). When implementing new technology, impacts from the implementation is not always clear on beforehand and it might affect more areas than ever imagined (Saint-Paul, 2008). This implies that change is not easy, the impacts might be extensive and the consequences might be others than intended. The capital market is an important industry in the current society, it is important to not interfere with its function and not expose it to unnecessary risks but at the same time it needs to be developed. The capital market is also highly regulated and it is important that changes within the market do not interfere with the regulations (Chowdhury, 2013).

Literature Review

The blockchain technology provides the computers within the network with the information they need to operate and verify transactions (Vigna & Casey, 2015). The blockchain stores all transactions and information about the transactions; the chain is public within the network and it is made available to the network instantaneous. No one can identify which individual performing the transaction because the technology uses the private-public key cryptography; the users are only presented by a pseudonym (Kelly, 2015; Vigna & Casey, 2015). The cryptographic keys are not revealed to any person or institution, only the owners have access to them. The blockchain uses the nodes within the network to get a consensus on the validity of each transaction. This validation method is based on comparing historical data from the chain with the specification of the current transaction (Vigna & Casey, 2015). The validators need to check that the assets involved in a transaction are available to the transaction originator according to the most recent information (Pinna & Ruttenberg, 2016). Once that consensus has been reached the receiver knows that the sender has valid funds. The signed transaction is then brought into the distributed ledger to be validated and recorded in the next update of the blockchain (Van de Velde et al, 2016; Chowdhury et al., 2015). The blockchain technology includes new methods and applications of encryption technologies that enable security and anonymity of sensitive data, even in the distributed and shared-access environment like the blockchain network (Van de Velde et al, 2016). The new encryption methods and applications allow the users to selectively reveal information depending on their needs. The mutual consensus verification protocol that the blockchain uses is another new innovation; it allows a network to agree on updates to the database collectively instead of using a central part that perform updates (Chowdhury, 2014). The consensus verification protocol also secures that the overall dataset remains correct. Another innovation is the smart contracts, which is program or code uploaded to a ledger instead of passive data entries (Van de Velde et al, 2016). Smart contracts are a way of transposing contracts imposed on users into the digital distributed ledger. Smart contracts can have access to a number of accounts and can transfer assets according to the terms of the contract, as soon as an event trigger the application of these terms. This provides an opportunity for automatic transactions to occur in response to a specific event. Smart contracts are written in the ledger and they follow the same validation method as any other blockchain transaction (Pinna & Ruttenberg, 2016; Chowdhury 2015; Swanson, 2015). Smart contracts might be the innovation that causes real change within the capital market since it can perform a number of tasks currently executed by intermediaries according to Pinna & Ruttenberg (2016).

Methodology

The information for this study has been gathered by analyzing a good number of refereed and non-refereed journals, newspaper, magazine, and special reports on the impact of blockchain on the stock market. The scope covers basic orientation on blockchain, benefits and adverse effect of blockchain, its impact on stock market operations from different dimensions.

Findings

Blockchain has become a buzzword for many organizations, industries, sectors specially finance. Different organizations like banks, governments, innovative institutions etc. are adopting this technology to earn benefits in all possible ways. Experts opined that blockchain technology highly suit in the field of finance. Although other experts disagree. However, the existing mechanism of

stock market is seriously complicated, time consuming, costly and risky. Blockchain can significantly contribute to this sector to resolve most of the problems. The following section reveals how this technology can bring turnaround change in this field;

1. Removing less important intermediaries

There are numerous middlemen between stock buyers and sellers. A single trade might involve stockbrokers, depositories, banks, and clearing corporations. These intermediaries often help the markets function more efficiently, but they're not all indispensable. Through smart contacts, buyer and seller do the transaction directly and can eliminate the intermediaries in between (Nofer, Gomber, Hinz & Schiereck 2017; Chowdhury 2016)

2. Integral regulation

Blockchain users stay connected and enjoy access to a common ledger remotely with the passkey. Traders can save money by permitting regulators some oversight into blockchain-powered trading platforms. Investors of all experience levels and financial means can avoid unforeseen legal consequences through real-time compliance (Ivan, 2016).

3. Unbiased and automated regulatory systems

Human regulators are biased as administrators of financial transactions, but blockchain-based trading platforms can serve as support by signaling suspicious transactions (Chowdhury et al., 2023). Blockchain can trace potentially suspicious transactions and most importantly it can do it without human intervention (Wright & De, 2018)

4. Enhancing opportunity for security tokens

Security tokens are issued through Security Token Offerings (STO). STOs are very popular to both startup businesses and investors as it a simple way of financing. But many security tokens are unlawful to some extent. Regulators are less active regarding STO issues whereas they highly value formal exchanges. Blockchain can easily help STOs operations in a better and flawless way so as to enhance the possibility of financing for the young startups and creating a smooth platform to park the hard-earned savings of investors (Chowdhury, 2017; Kaal & Dell, 2017)

5. Shortening trade settlement time

Smart contract technology replaces ineffective, costly human errors in blockchain-driven trading platforms. The contracts execute as soon as some prerequisite criteria is fulfilled, like a buyer and seller agreeing on a price point. Quicker trades reduce time lags (Chiu & Koeppl, 2019).

6. Accelerating dividend payments

Most of the investors expect regular dividends from their investment. It constitutes a significant portion of total returns on investment. Under traditional system, it takes several weeks to get the dividend in hand. Companies could save time and money by implementing automation in the dividend payment process (Chowdhury, 2019). Blockchain smart contracts create self-executing payments to release dividends to shareholders more quickly and cost-effectively (Rechtman, 2017).

7. Quick fundraising

Blockchain technology helps to raise any funds at any time from the public directly without the help of intermediaries (Chowdhury, 2020). It sends smart contracts at once to perform the transactions which saves both cost and time without forfeiting the quality (Till, Peters, Afshar & Meara, 2017).

8. Token-facilitated micro investing

There are many high-priced shares in most of the bourses which small investors cannot buy. Security Token Services (STS) system of blockchain technology can easily resolve this issue. The shares can be broken into smaller increments, so virtually any investor can claim a share (Zhang, White, Schmidt, Lenz, & Rosenbloom 2018).

9. Tracking securities lending

Investing in ETF (exchange-traded fund) reduces the risk to a greater extend as the fund is utilized to buy different stocks from different sectors. An ETF is a marketable security that tracks a stock index, a commodity, bonds, or a basket of assets. These funds are managed by highly knowledgeable, trained and experienced people (Chowdhury, 2022). Most of the ETFs are heavily invested in the sort of leveraged loans that led to the last financial crisis. But for ETF managers making sound investment decisions, lending securities to short sellers is a low-stress proposition with potential upside. Tracking the prices of these ETFs is important from both a buyer's and seller's perspective. Blockchain-powered platforms can track the values and status of borrowed ETFs, and trigger the issuance of collateral (through smart contracts) if the short seller becomes overleveraged (Molinari, Latona, Pallotta, & Friedman, 2017)

10. Participating in AGM from a remote place

A stockholder can participate in an annual general meeting (AGM) and cast his/her vote by using blockchain technology from a remote place. The blockchain allows flexible participation in meetings without the threat of hacking (Chowdhury et al., 2021; Van & Lafarre, 2017).

Conclusion

Blockchain is going to bring a paradigm shift in the traditional stock market mechanism through complex level of digitalization. Smart contracts will massively eliminate unnecessary intermediaries and thus bring the associated costs to a drastic level. Since there is possibility of potential errors, market regulators need to be more conscious about the implementation of smart contracts. The blockchain technology may be implemented either as a permissioned or permissionless version (Chowdhury et al., 2022). The permissioned alternative seems to be more relevant for the stock market as it ensures integrity and strong security. Considering the application and requirements of users both the alternatives may be used simultaneously (Lundström, 2016). Since blockchain will replace manual operations, it may eat up the breads of many people who are engaged in the traditional process. A flexible development and implementation process may help dealing with unintended consequences (Rosati & Cuk, 2019). The consequences might not be

visible immediately; it might take a while to identify all effects. Therefore, a more collaborative approach may realize the full potentials of blockchain.

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