BLOCKCHAIN AND CORPORATE GOVERNANCE: A STRUCTURAL SYMBIOSIS IN INDIA

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ABSTRACT

In recent times, the emergence of different technologies indeed creates a whole new arena of possibilities which has a ripple effect on every industry and every stakeholder. One such unique technology, is the rigid Blockchain which features as an essential database that ensures freedom, democracy, safety and complete transparency.

The aspect of blockchain is first discussed with its applications in both the financial and non-financial sector. Secondly, the validity of blockchain and cryptocurrency in India is analysed and a thorough discussion with respect to the apprehensions of RBI and Ministry of Finance is made. The landmark judgment of Supreme Court of India whereby the ban on cryptocurrencies was lifted has been analysed to bring out the sensitives involved behind the idea of adoption of blockchain and cryptocurrency.

To help the law makers make informed decisions, the development and experimentation involved in blockchain technology in Indian market is illustrated. Lastly, the usage of blockchain in the form of smart contracts, DAOs, E-voting is analysed to fulfil the objectives of good corporate governance and remove discrimination, malpractices and protect shareholder's rights. Corporate governance is indeed important for the success of the firm and the maintenance of good relationship between different stakeholders.

INTRODUCTION - WHAT IS A BLOCKCHAIN?

Blockchain, which is known as the backbone technology underpinning Bitcoin, is one of the newest technologies on the market right now, generating a lot of interest from businesses, start-ups, and the media. Blockchain is a mechanism for exchanging value without the use of a middleman over the internet. Blockchain has the ability to alter a wide range of industries and processes by making them more democratic, safe, honest, and effective.[1]

A blockchain is a kind of Database that captures information in a structured table manner which helps users to skim read and filter the necessary information. Blockchain helps in bringing in large data on servers, made of powerful computers which are constructed using numerous computers in order to have the computational strength and storage capacity which is indeed important for large users to access the data. A blockchain is a kind of digital ledger that organises data into groups called blocks, each of which contains a collection of data. Blocks have certain fixed storage capabilities, and when they are filled, they are connected to the previous block, establishing a data chain known as a "blockchain." All extra information added after the newly added block is formed as a new block, which is then added to the chain after it is filled. A database organises information into tables, but a blockchain organises information into chunks (blocks) that are linked together. Each and every node contains a complete record of data stored on the blockchain since its start. If a node's data has an error, it can use the various other nodes as a point of cross- reference to rectify itself.

In this way, no particular node in the network may change the data it contains. As a result, the history of transactions in each block of blockchain is hard and fast. If one user tampers with the transaction record, all other nodes will cross-reference each other, making it easy to find the node that has the incorrect data. This system helps in the establishment of a precise and visible sequence of occurrences.[2]

[1] Binaifer Karanjia, Shankar Lakshman, Saurajit Goswami, 'Blockchain- The New Age Business Disruptor' , DELOITTE, April 2017, available at: https://www2.deloitte.com/content/dam/Deloitte/in/Documents/strategy/in-strategy-innovation-blockchain-technology-india-opportunities-challenges-noexp.pdf (last visited on May 24, 2022)
[2]Luke Conway, 'Blockchain Explained', INVESTOPEDIA, June 2021, available at: https://www.investopedia.com/terms/b/blockchain.asp, (last visited on May 24, 2022)

FEATURES OF A BLOCKCHAIN[3]

Blockchain facilitates the settlement of recorded transactions in near real time, cutting friction and lowering risk. Cryptographic proof is used instead of human trust, to enable any two parties to deal directly with one another without the requirement for a trusted third party. A public history of transactions is kept on the community distributed network. The blockchain is a distributed ledger with a high level of functionality. Only the proof of the transaction's existence is stored on the blockchain, not the identities of the parties or the transaction data. Every single transaction ever made is recorded in the blockchain, which is certain and provable. This prohibits previous blocks from being changed, preventing double expenditure, cheating, misuse, and transactional tampering. Recorded procedures operate on a Blockchain to conduct pre-defined business stages and complete a commercially/legally enforceable transaction without the need for a middleman.

TYPES OF BLOCKCHAIN

Public Blockchain- Anyone may read, transmit transactions, and participate in the consensus mechanism since blockchain is totally decentralised and transparent.

Permissioned Blockchain- It involves pre-selected set of nodes managing consensus and its read access being restricted to certain participants.

Private Blockchain- A 'high confidence' organization with centralised written permissions for one organization and read permissions for all participants.

APPLICATIONS OF BLOCKCHAIN

IN FINANCIAL INDUSTRY

Blockchain eliminates intermediaries, equities and payments that can be transferred faster and trading costs can be decreased. It helps in Issuance and distribution of commercial documents to shareholders based on smart contracts, as well as delivery and payment settlement. It shortens the trade finance process with minimal middleman intervention. Further

[3] Binaifer Karanjia, Shankar Lakshman, Saurajit Goswami, 'Blockchain- The New Age Business Disruptor' , DELOITTE, April 2017, available at: https://www2.deloitte.com/content/dam/Deloitte/in/Documents/strategy/in-strategy-innovation-blockchain-technology-india-opportunities-challenges-noexp.pdf (last visited on May 24, 2022)

it prevents errors associated with manual auditing, reduces reporting expenses, supports future operations and stores financial data. It helps in verification of identities and the accuracy of applications, assesses risk, and completes the citing and binding procedure. It improves customer enrolment experience using the digital identities and 'Know your customer' option is provided by the blockchain. Consumers can see their transactions being executed in as little as 10 minutes, or the time it takes to add a block to the blockchain, thanks to the integration of blockchain into banks, regardless of holidays, time of day, or week. Banks can also use blockchain to transfer money more rapidly and securely between institutions.

IN NON-FINANCIAL SERVICES INDUSTRY

Blockchain uses a Facebook messenger chatbot to collect warranty receipt. It helps to lessen the problems between sellers and customers for lost/unreadable receipts and also tracks Ownership History. A blockchain-based tracking of oil through the chain of supply gives an immutable view of all events through the asset's lifecycle. Due to improved network transparency, the lease's financial management can be improved.

Healthcare

When a medical record is made, it can be captured immediately on the blockchain, giving patients confirmation and assurance that the record cannot be altered. This personal health information might be encrypted and saved on the blockchain using a private key, guaranteeing that only certain people have access to them.

VALIDITY OF BLOCKCHAIN AND CRYPTOCURRENCY IN INDIA

In the recent years, the usage of blockchain especially in the form of virtual currencies have increased for example be it Bitcoin, ETH, Litecoin etc. Companies globally as well as in India have started to invest and engage in Virtual currencies. The estimated projection that blockchain could produce a 3 trillion USD for all economies by 2030[4] ensures that major changes and accommodations have to be made to facilitate the same. With India gaining a huge

[4] Katie Costello, 'Gartner Predicts 90% of Current Enterprise Blockchain Platform Implementations Will Require Replacement by 2021', *GARTNER*, June 2019, available at: https://www.gartner.com/en/newsroom/press-releases/2019-07-03-gartner-predicts-90--of-current-enterprise-blockchain, (last visited on May 24 2022)

leap at the World Bank's Ease of doing business ranking 2020, making a mark at 66[5], it is important to make foreign as well as internal investors and the public to have trust and transparency towards the security and regulation procedure of blockchain and associated virtual currencies.

India doesn't have a proper legislation to regulate the activities and functioning of blockchain and Virtual currencies. Even though the technology has gained much popularity in these years, the RBI and the Ministry of Finance have always cautioned the public regarding the malpractices and the risk associated with virtual currencies and had stated that "they are not an authorised mode of exchange" and no authorised licensing policy have been issued for those modes.

In February 2022, the Finance Minister had announced about the introduction of Digital Rupee forming a part of the Central Bank Digital Currency (CBDC) in the Union Budget of 2022-2023[6]. Apart from that 30% tax will be levied on all income generated from trading in crypto currency, which makes it non-attractive for investors to invest in crypto currency.

The Information Technology Act, 2000 and rules framed (including the Information Technology Reasonable Security Practices and Procedures and Sensitive Personal Data or Information (SPDI)) Rules, 2011, makes sure that the users have to be careful while using blockchain by ensuring sufficient antivirus protection, to prevent cybercrime and cyber security risks and mandates them to comply with the SPDI rules. But even then, there are difficulties in implementation of these rules because of the lack of initiative by any entity governing the same and also because of its decentralised character which is formed through peer-to peer connections.

TIME LINE OF EVENTS

Position of RBI

[5] Arfa Javaid, 'Ease of Doing Business 2020: India ascended 17 notches, ranked at 63rd position by The World Bank', JAGRANJOSH, December 2020, available at: https://www.jagranjosh.com/general-knowledge/ease-of-doing-business-1608733969-1, (last visited on May 24, 2022)

6 'Cryptocurrency and Budget 2022-Everything you need to know', THE ECONOMIC TIMES, Feb 1, 2022, available at: https://economictimes.indiatimes.com//markets/cryptocurrency/cryptocurrency-and-budget-2022-everything-you-need-toknow/articleshow/89278494.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst, (last visited on May 24, 2022)

The RBI was not in favour of the usage of Virtual currencies and had given out press releases to caution and advise the public, the users, investors and various stakeholders to explain the various risks such as legal complications, security- threat risk, financial risk associated with it. In December 23 ,2013, the RBI listed out its concerns and advises, they are[7]:

• Virtual currencies are not authorised medium of exchange and it is not regulated by the central bank.

• Since they are electronically stored in digital spaces, there are high chances of risk involved like "hacking, malware attack" and other related cyber-crime which can cause irrecoverable loss of money.

• There is a lack of redressal or "recourse machinery" to address the issue of conflicts, disputes because they are not regularised by the RBI.

• The RBI also quoted media reports concerning the malicious, illegal and illicit transactions involved in virtual currency which might lead to the breach of "anti-money laundering and counter-terrorist financing" laws, because of anonymity.

Even in February 2017 and December 2017, the RBI had reiterated the same and said that it had not issued any license or authorisation to any company or industry on this aspect and that users will undertake it at their own risk.[8]

Bills Prior to 2020

The recommendation of the first draft bill[9] was rejected and the second draft bill[10], had recommendations for banning the usage of cryptocurrency as a medium of payment, selling, buying and trading of cryptocurrency and raising capital and funds for investment etc.

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[7] Reserve Bank of India, 'RBI cautions users of Virtual Currencies against Risks', December 24, 2013, available at: https://rbi.org.in/scripts/BS_PressReleaseDisplay.aspx?prid=30247, (last visited on May 24, 2022)
[8] Reserve Bank of India, 'Prohibition on dealing in Virtual Currencies (VCs)', April 6 2018, available at: https://rbidocs.rbi.org.in/rdocs/Notification/PDFs/NOTI15465B741A10B0E45E896C62A9C83AB938F.PDF, (last visited on May 24, 2022)
[9] Devika Gadgil, Himanshi Tailor, 'India: Cryptocurrency in India – To Ban or Not to Ban?', MONDAQ, March 30, 2021), available at: https://www.mondaq.com/india/fin-tech/1045376/cryptocurrency-in-india-to-ban-or-not-to-ban, (last visited on May 24, 2022)
[10] 'Draft Banning of Cryptocurrency & Regulation of Official Digital Currency Bill', PRS INDIA, 2019, available at: https://prsindia.org/billtrack/draft-banning-of-cryptocurrency-regulation-of-official-digital-currency-bill-2019, (last visited on May 24, 2022)

Supreme Court Decision in 2020

The RBI had issued a ban on the dealing in crypto currency on April 6th 2018[11], stating that the companies which comes under the purview of the central bank is banned from issuing, dealing, purchasing, registering and trading in virtual currency to raise capital, financing through collateral, settling debts etc. The already existing entities who had dealt with the same have to stop their operations within 3 months. This notification came as a bigger problem to those stakeholders who were involved in the trading of virtual currencies.

This notification of the RBI was challenged before the SC, in the case, ***Internet and Mobile Association of India V. Reserve Bank of India***[12], and the SC in march 2020, consisting of a three-judge bench headed by Justices Rohinton Nariman, Aniruddha Bose and V. Ramasubramanian, had ruled in favour of the petitioners, thereby squashing the order of the RBI passed on April 6th 2018 and lifted the ban on dealing in virtual currencies.

The notification passed by the RBI is against the freedom to practice any trade, profession, thereby violating article 19(1)(g) of the Constitution. It is not a reasonable restriction and the doctrine of proportionality cannot be taken as a defence by the RBI. There should a proportionate balance between the interests of the public and the orders passed to infringe or reasonable restrict the same.

The judges relied upon the case***, Modern Dental College and Research Centre v. State of Madhya Pradesh***[13] , to reiterate the concept of proportionality, and stated that the RBI notification lacked the necessary intent to be achieved and the means of achieving the aim and measures undertaken to realise the same by curbing the rights of individuals, are not proportionate in nature.

The defence laid down by RBI in the form of wide connotations of black money, illegal usage of money lacked the necessary intent to be established. The measures undertaken by the RBI to impose a ban without providing recourse to the stakeholders involved in the Virtual currency

[11] Reserve Bank of India, 'Prohibition on dealing in Virtual Currencies (VCs)', April 6, 2018, available at: https://rbidocs.rbi.org.in/rdocs/Notification/PDFs/NOTI15465B741A10B0E45E896C62A9C83AB938F.PDF, (last visited on May 24, 2022)
[12] Internet and Mobile Association of India V. Reserve Bank of India (2018) Writ Petition (Civil) No.528
[13] Modern Dental College and Research Centre v. State of Madhya Pradesh (2016) 7 SCC 353

industry, is arbitrary and unreasonable. RBI had failed to show the loss that it suffered by virtual currencies statistically and wiped out the entire industry without any basis.

With regards to the claim of Jurisdiction, the SC said that, virtual currencies cannot be termed as a "money or legal tender" since it lacked the concept of storage value, mode of payment for discharging debt, widely accepted mode of exchange etc., but having said that RBI being the regulatory authority, can form an alternate mode for the monitoring, regularising and regulating the concept of Virtual currencies.

Cryptocurrency and Regulation of Official Digital Currency Bill, 2021

This marks one of the major attempts by the Union government to regulate and authenticate the spectrum of virtual currencies, to facilitate the ease of business and develop a new arena for the proliferation of this industry. The bill seeks to:

- To ban all private forms of virtual currencies.

- To build a regulatory framework and also facilitate the issuance of the official cryptocurrency which has to be created and controlled by the RBI.

- Certain accommodations will be undertaken for the facilitation of cryptocurrency technology and its maintenance.

Banning private cryptocurrencies might lead to black-marketing and illegal formation of entities thereby diluting the purpose of regulating cryptocurrencies. Moreover, the risks that are associated with virtual currencies will now be borne by the RBI, therefore significant measures to mitigate the same has to be undertaken. The ease of doing business has to be kept in mind and the promotion of foreign investors and the laws facilitating and regulating them should be properly formulated. Within 2020 and 2021, as per the data collected by the blockchain company Chainanalysis, the cryptocurrency market had jumped from 923 million dollar to 6.6 billion dollar and making India rank at the 18th position in bitcoin investment[14]. Therefore, the usage of private cryptocurrencies cannot be entirely banned since a number of

[14]Roopashree Sharma, 'Cryptocurrency Bill – All You Need to Know', JAGRANJOSH, July 15, 2021, available at: https://www.jagranjosh.com/current-affairs/cryptocurrency-bill-all-you-need-to-know-1626158092-1, (last visited on May 25, 2022)

stakeholders are involved in the same and without any substantial threat imposed, it may violate article 19(1)(g) of the Constitution.

DEVELOPMENT IN INDIAN MARKET

The Indian market has become a booming place for the adoption of blockchain technology in various sectors by various entities. In this modern era, there is a compelling need to incorporate the new age technology to ensure ease of business, tap the economies of scale and to take advantage of the practicalities of the global world. Various sources in India have started to experiment on this new age technology and tap its benefits.

• The NITI AYOG is one such platform which aims to use block chain technology, in partnership with the Gujarat Narmada Valley Fertilisers[15]and chemicals, to ensure supply of fertilisers and subsidy management in a smooth and efficient manner. The fertilisers can be used as a digital asset and is capable of being traded off through blockchain technology.

• Various seminars, conferences and lectures regarding blockchain technology are given by the Federation of Indian Chambers of Commerce and Industry, to tap the potential developments in this new technology and form a regulatory body to monitor and facilitate the same.

• To develop a new age banking system, blockchain experiments are undertaken by SBI bank[16] and other banks alike, to form an integrated online KYC platform which will seek to facilitate storage of large amount of data in a seamless manner. Further, trading agreements, agency agreements, loan and debt financing process can be processed in a much efficient manner without any human error.

• An effort has been made by the Ministry of Commerce to connect farmers with trade markets using the blockchain based trading application, thereby ensuring transparency in

[15] Niti Aayog, 'NITI Aayog partners with GNFC Ltd to implement Fertilizer Subsidy Disbursement through Blockchain Technology', June 29, 2018, available at: https://pib.gov.in/Pressreleaseshare.aspx?PRID=1537221, (last visited on May 25, 2022)

[16] Saikat Das, Ashwin Manikandan, 'SBI joins JPMorgan's blockchain-based payment network', THE ECONOMIC TIMES, February 23 2021, available at: https://economictimes.indiatimes.com/industry/banking/finance/banking/state-bank-of-india-joins-jpmorgans-blockchain-based-payment%20network/articleshow/81157341.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst, (last visited on May 25, 2022)

dealing and making fair price deals accessible to coffee producers[17]. This curbs exploitation of indigenous and marginalised producers.

• A dedicated R&D institute has been framed under the auspices of e-mudra[18], which comes under the IT Act, to enable the study of blockchain technology to facilitate security, transaction verification and ID verification of Aadhaar. Thereby the concept of transparency is ensured and it is easier to cross verify records by different government departments.

• Various State Governments have incorporated blockchain technology in dealing with property related issues like land registration, motor vehicle registration, supply chain financing etc.

• Blockchain can be developed to streamline the usage of patent and copyright so as to prevent overburdening, delay in processing and verify records to segregate into proper Intellectual Property in a legal manner.

• After the 2020 judgement by SC regarding the cryptocurrency[19], even the RBI has lifted its ban on usage of virtual currencies and facilitated the dealing of the same.

CORPORATE GOVERNANCE

With the advent of globalization and liberalization, the spread of economy in the form of companies and corporations have increased multi-fold. The increase in the number of shareholders and the physical impracticality to deal with day-to-day affairs of the company, has led to the creation of directors and board of directors who take decisions on behalf of the company and shareholders per se. It becomes a necessity to incorporate good corporate governance practices so as to ensure that the mutual trust between the shareholders and the board of directors is maintained properly.

Some of the essential aspects of good corporate governance includes, shareholder's wealth maximisation, information transparency, corporate social responsibility and protection of

[17] Ministry of Commerce and Industry, India, 'Coffee Board Activates Blockchain Based Marketplace in India' , March 28 2019, available at: https://pib.gov.in/Pressreleaseshare.aspx?PRID=1569797, (last visited on May 25, 2022)

[18]'Smart Contract Blockchain Solution', EMUDHRA.COM, available at: https://www.emudhra.com/download/others/brochures/emBlock.pdf, (last visited on May 25, 2022)

[19] Internet and Mobile Association of India V. Reserve Bank of India, (2018) Writ Petition (Civil) No.528

minority shareholders. Blockchain Technology can be infused in various forms to achieve the aforementioned objectives of good corporate governance.

1. Smart Contracts

Smart Contracts helps to facilitate error- free contractual terms in a transparent manner with null transaction costs. They are computer protocols that substantiates and eases the process of negotiation and execution of a contact. Since the element of clarity is well established and the nature of the blockchain protocols are rigid and untappable, it makes the whole process more secure and trustworthy. The Portfolio of an entire company is available on hand to the stakeholders who are stationed at different parts of the world. For Example, an investor who wishes to finance the company, can easily look up to the blockchain data to ascertain the repaying capacity and behavioural trends of the entity. Cost reduction happens to be one of the major attractive features in the Blockchain incorporation.

Implications:

Certain threats are associated with smart contracts which have to be kept in mind while dealing with the same. These include:

a.) Smart contracts require experts in the field of programming, to provide with the accurate input. But in reality, lawyers who execute contracts normally lack the technical expertise. Similarly, programming experts might not be aware of the complex legal structure.

Solution: In this modern era, Lawyers should be made equipped with essential programming language to figure out discrepancies that need to be rectified. Lawyers have to recognize and remove clauses of an agreement which requires huge flexibility and elucidation. Legal Profession might as a consequence, concentrate on value-added services which require creativity and innovative thinking by adopting an advisory role. Strong client relationships and their management are human behavioural patterns and should be left to the lawyers who will still be paramount in that arena.

b.) Due to the rigid nature of blockchain, it makes it highly impossible to change the contractual terms once drafted. This poses a problem since, the terms of contract may change due to circumstantial requirements. The need to emphasize “exceptional circumstances” for

non-performance in a traditional contract cannot be easily applied to in the digital sense, since the flow of the data in a blockchain gets immensely disturbed even with a slightest inaccuracy.

Solution: The rigid nature of blockchain should be altered in such a way that, once a new update in the data is given into a new block, the old one should become unusable. For example: If a new phrase is added to the contract, it should render the old phrase in the same subject invalid. In this way, the flow of data would not get disturbed since old blocks are not touched, only new data blocks are added.

c.) Legal Difficulties: It is difficult to prove Mens Rea(intention) of the contracting parties in a digital contract, since a contract apart from requiring offer and acceptance, includes the main element of intention to create legal bond. This poses a significant issue when contracts get auto-renewed without the knowledge or the intention of the parties.

Solution: The intention to establish consent and enter into contractual terms has to be redefined so that the smart contracts are given legal recognition. Such definition should include express warrant of consent given by the parties to the contract at proper intervals.

d.) Privacy of data is a great challenge to be protected since the permanent capturing of personal data would be tricky and is converse to the idea of transparency that blockchain wishes to give to its users.

Solution: To reduce privacy disruptions, the blockchain would need to be modified in such a way that its visibility of transactions is limited only to the secure nodes. Complete removal of data is strenuous on a blockchain and new solutions have to be drafted to align smart contracts in line with data rules.

e.) We cannot completely avoid the concepts of bugs, malware and virus which can hit the internal security of a smart contract causing loss/manipulation of data. For Instance, the attack of DAO (Decentralised Autonomous Organisation) caused 15 percent loss of Ether, which was then fixed by a fork approach which suggested in freezing assets to prevent DAO from losing ether.[20] Such approaches might be a one-time fix for the problems, but the issue of bugs is perennial and therefore susceptible to human error. Bug Detectors might be

[20] David Siegel, 'Understanding the DAO Attack', COINDESK, June 25 2016, available at: https://www.coindesk.com/understanding-dao-hack-journalists, (last visited on May 25, 2022)

incorporated but it reduces the speed of working of the blockchain. Until and unless a proper security code is ensured, the smart contracts would pose a huge threat to the entities.

Solution: Anti-virus and malware protection software which does not affect the working speed of blockchain should be formulated and incorporated to fight bugs, malwares and virus.

f.) Jurisdictional Issues: The issue of maintainability to ascertain the legality of smart contracts is not given under the Indian legislation. In such a case, the application of IT Act in consonance with the Indian Evidence Act, 1872[21] have to be studied-

i.) The Court has a presumption that unless the contrary is proven, the evidence is deemed to be a 'secure' electronic record and is presented unaltered.

ii.) The onus of proof is on the party involved in the case of an electronic record to show that their evidence is authentic in case the court finds the evidence 'not secure'.

Since the parties to the smart contract can be from any part of the world, it becomes difficult to ascertain the jurisdictional limit of each node to enforce the performance of contract.

Solution: Regulatory framework has to be created by the government through legislations to avoid jurisdictional defects. International treaties and conventions should be signed to protect stakeholders from cyber-security threats and attacks.

2.) Decentralized Autonomous Organization (DAO)

The DAO started in May 2016, to create an organizational structure devoid of traditional hierarchical governance structure. This system was based entirely on Ethereum's public decentralised blockchain technology, including software, programming, and smart contracts. It had no tangible address, lacked jurisdiction by any state, and was a mere computer code. It essentially has no hierarchical structure involved in a company inclusive of directors, managers, assistants, employees and workers.

It is a system against the traditional principal agency relationship which seek to revolutionize the existing loopholes in governance structure. It is free from organizational rigidity, complicated rules, and aims to curb red-tapism and bureaucracy leading to formation

[21] The Indian Evidence Act,1872, §85 B

of a democratic fabric. Since the Blockchain Industry still in its developmental stage, its mainstream effects cannot possibly collapse the skeleton of corporate structures. They hold the potential of forming decentralized alternatives of the corporate structures.

Features:

a. Decentralized structure lacks central intelligence that learns from past behaviours but uses information which is dispersed throughout the network and not concentrated in a single point. They are spread-out in the edges where action arises and where the real time data is formed.

b. The flow of information can rapidly mutate and change because of it being enhanced by the multiple feedback effects. They become impervious to attacks on various levels.

c. Higher efficiency can be witnessed in DAO's with an increased level of customization which allows all its player to gain autonomous powers and allows them to actively participate in the decision-making process. The consequences of the same are higher productivity and fair rewards assured to the different stakeholders. This creates a unique structure by redefining authority- responsibility relationships, through participation of employees in the right time at the right place.

Implications:

Accountability can be traced in an organization through the usage of new-age technologies like DAOs to promote good corporate governance. DAOs act as a regulatory structure to keep a check at different levels in the organization, making every person responsible to the welfare of the company. Economies of scale can be utilized because of trust based relationship created through informed group decisions and lower transactional costs. Since there exists an anonymity factor in the game, the players cannot indulge in corruptive practices by influencing power or taking advantage of the other party.

a.) A central power is required to take decisions in the time of crisis which is not possible in this case, hence when a mishap takes place, there is lack of accountability. A decentralized structure may not take into account the organizational characteristics and motivational factor to bring in the individual goals at par with the larger organizational goals.

b.) Moreover DAOs suffer from the problems associated with smart contracts which includes reading into the provisions, hands on experience, decision making capability and vague legal questions concerning liability.

c.) Historical Precedence has been an important factor in the Judicial system to bring in justice in a dispute. But this factor lacks in DAO mechanism.

Solution: Without disrupting the traditional structure of a company, the blockchain technology can be used as an aid to facilitate jobs which are time-consuming, strenuous, repetitive and involves huge chunks of data. The final decision-making authority should be given to the shareholders and directors since machine cannot have the experience and expertise as that of a human being. The decision makers cannot manipulate any peer, since the data obtained is rigid, transparent and stored in the blocks. If any error occurs, cross-verification becomes easier, and the person who tries to manipulate the data can be caught.

Artificial Intelligence can be a substitute for the Central Intelligence which the blockchain lacks. By this, behavioural patterns of a company are identified and learned for a long time and a solution is sought in case of discrepancies. This fulfils the need of historical precedence and also enables the investors to analyse the repaying capacity of the company while financing. Replacements or unique solutions can then be added onto a new block. Such Intelligence makes the working of blockchain more efficient and reduces burden.

3. Protection of Shareholder's rights

None of the players in the business or agency, can find a way out of the set of rules set by the corporate, which is indeed ensured by the implanted blockchain code. The blockchain technology acts as a monitory and regulatory authority to keep a check on the workings and functioning of the board of directors.

The company's ideology of problem solving and decision making can be monitored and structured in a uniform way. This allows room for shareholders to gauge upon the decision of the board without being affected by its uncertainty and arbitrariness. Moreover, in the advent of digital meetings, even important resolutions that are passed can be easily accessible and structured to gain the acceptance of the shareholders.

Many new age technologies like Otonomos etc help to keep the corporate structure

based on blockchain be in consonance with the legal framework. This ensures that minority shareholder's rights are also protected and promoted. Also, the elimination of fungible tokens helps to prevent corruption and illegal practises on behalf of the majority shareholders which aims at oppressing the minority.

Implications:

a.) Since the time of conception of company law practice and formation of large entities, the identification of shareholders has become a major problem. The identification of shareholders plays an important role to ensure that their rights and power are protected. With the advent of multiple players and intermediaries cashing in their advantage, the ultimate aim of protection is lost. The surge of information and obligations provided by the EU directive of shareholders right makes the process of identification more complicated, costly and prone to errors. Involving the blockchain technology within such surge would cost a fortune to the company to resolve many more issues arising out of it.

Solution: Blockchain Technology can be used to segregate and list the shareholders in a proper, transparent manner with their shareholdings and details executed in a seamless manner. For the protection of such a register, a selected group of people can be appointed to safeguard the same and their activities can be monitored by the shareholders in real time.

b.) Confidential information of the shareholder is publicly available to the users because of the transparent nature of blockchain.

Solution: The transparency of a public blockchain can be limited to permissioned blockchain which is made accessible only to the shareholders.

4. Ease of Election Process

In Annual General Meetings (AGM), the decisions of shareholders are pooled in to make resolutions. This is an important process because the participation of each and every shareholder has to be ensured to prevent any kind of discrimination or malicious activity. In this pandemic, e-voting with the help of Blockchain, proves to be efficient way of recording votes without any discrepancies. The data storage is encrypted and stored in an anonymous manner, while the voting tokens are distributed to the shareholders who can directly cast their

votes in AGM. This whole process is effective, quick and documented in real time which provides easy access into the company's securities holders, holdings and votes.

The voting right asset and token asset is directly passed to the beneficial owner to facilitate the votes of remote shareholders, international clients and to eliminate proxy. The complete voting history of a single account is accessible to the stakeholders. They will have a comprised online access to all the meetings through a single account, with all the important information and the voting process itself. This brings down the complication surrounding stakeholder involvement and such records cannot be easily tampered with.

Blockchain based voting through the private blockchain network warrants for both the elimination of proxy voting and the correct usage of rights given to the voters. It cultivates cross- border financing.

A Blockchain platform called Boardroom was created by ConsenSys (Product developers of Ethereum Network) in 2017, for the simplification of Voting, Allocation of budget etc. of the Board Members.[22]

NuArca using the IBM's Blockchain platform developed a record-storing technology called TransactChain which is helpful to convert the proxy voting network into a safe anonymous channel of vote.[23]

5. Reduces Procedural Compliance

The incorporation of a company involves the drafting of major legal documents such as Memorandum of Association, Articles of Association and other registrational requirements. There happens to be a huge burden in the compliance of such procedure which takes months.

Using blockchain technology the process of registration can be done through e-documents encrypted with a certain format. This reduces the burden on the company as well as facilitates cross verification and allocation which can be easily done by the Government

[22] Josiah Nakori, 'How can Blockchain Tackle Issues in Proxy Voting', THEBLOCKCHAINLAND, January 31, 2020, available at: https://theblockchainland.com/2020/01/31/blockchain-tackle-issues-proxy-voting/, (last visited on May 25, 2022)

[23] Todd Cooper, 'The problem with proxy voting — and how blockchain can help', IBM, July 9, 2019, available at: https://www.ibm.com/blogs/blockchain/2019/07/the-problem-with-proxy-voting-and-how-blockchain-can-help/, (last visited on May 26, 2022)

agencies and also helps them to monitor the company's activities efficiently. The record of such documents is permanently inscribed and is capable of being viewed by the public and various investors. This benefits the numerous Small and Medium Enterprises (SME's) who are terrified by such complications in registration as a result of which they fail to gain recognition under the Companies Act, 2013.

Implications:

Due to the rigid nature of blockchain, alterations cannot be made to the data entered. Companies exist more than the lifetime of a human being, which naturally subjects them to modifications in a long run. For example- Opening of a new branch, change in the address of headquarters, death/resignation/retirement of a director, Alteration in the AOA etc.

Solution: The rigid nature of blockchain should be altered in such a way that, once a new update in the data is given into a new block, the old one should become invalid. For example: If a list of new board of directors is added, the old one should render unusable.

CONCLUSION

Necessity is the mother of invention. With the changing times, the companies and the government have to adopt their practices in par with the current technology to ensure that they sustain the competition. An entire array of changes has to be facilitated by legislators, corporate lawyers to understand the nuances and threats posed by the adoption of blockchain technology. Since the technology by itself has a great deal of positives as well as negatives, they need to be analysed and made aware to the different stakeholders through governmental action, seminars, Lecture demonstrations etc. For example, corporate lawyers have to indulge in a more serious role of creating contracts which are innovative, simple and draft the contract in a flexible manner to include provisions for any uncertainty that is likely to take place. Financial laws and regulations have to be properly accounted to ensure legal compliance.

Corporate governance plays an important part in today's scenario. By the usage of blockchain technologies through smart contracts, DAOs, e-voting etc, the objectives of transparency, accountability and fairness is ensured. Shareholder representation and transparency is indeed a helpful factor to maximise wealth of the entity. Through a secured and indestructible blockchain system, there is prevention of malpractice and avoidance of

manipulation of the minority and the weaker sections. Additionally, Artificial Intelligence and Machine learning techniques can be used to mitigate the shortcomings of blockchain technology.

In India, since there is a lack of regulatory structure, uncertainty creeps in the minds of users which has to be removed through proper awareness. The experiments undertaken by various institutes like NITI Aayog, SBI etc has to be looked into so as to analyse the benefits and implications to ensure that a balanced approach is undertaken while drafting legislations. One such draft bill that has emerged is the Cryptocurrency and Regulation of Official Digital Currency Bill, 2021. The bill does prevent the existence of private cryptocurrency and leads to the creation of a single official currency which will not be helpful since various stakeholders are involved in private cryptocurrencies as well and may lead to illegal underground markets. Instead of a complete ban, the government can take inspiration from the "The Payment Services Act of Japan ("Japan Act")[24], which included those cryptocurrencies which are operated by registered participants, thereby controlling the system and also subjecting the system to money laundering laws and protection of users.

Moreover, the drafting of new age technology bills requires closer inspection because of the socio-ethical implications, privacy and cyber security. Blockchains prove to be helpful in mitigating cyber security attacks as well, through secured DNS system, not being dependant on regular passwords and instead using hashes, software validations and integrated authentication system. Therefore, these security measures can be made compulsory through legislations to prevent the attack of the same. Unique solutions have to be provided through experiments by helping developers undertake the same. The government can finance such projects to tap the potentiality of blockchain.

[24] Devika Gadgil, Himanshi Tailor, 'India: Cryptocurrency in India – To Ban or Not to Ban?', MONDAQ, March 30, 2021, available at: https://www.mondaq.com/india/fin-tech/1045376/cryptocurrency-in-india-to-ban-or-not-to-ban, (last visited on May 25, 2022)