

Regulating Blockchain: A Prospective for Governments and Policy Makers

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Abstract— Blockchain technology is a revolutionary tool with the potential to provide a decentralised and a secure transactional platform as well as a means of storing and transferring data through online platforms. However, just like with any technological advancements, the possibility of exploiting and misusing this important innovation is seen to be experienced despite its short presence. This paper aims to explore the importance on mitigating such activities through the regulatory bodies by focusing existing laws and through the introduction of new laws and regulations without hindering the innovation of this technology. As regulatory bodies are yet to identify the best approach to this technology due to its evolving nature, this paper identifies through qualitative research based on available laws and regulations and other related documents, 6 key areas to focus by the regulators in providing a way forward for regulating blockchain technology.

Keywords— Blockchain, Cryptocurrency, Data Security, Privacy laws and Regulations.

1. INTRODUCTION

A public immutable distributed ledger which is decentralised¹, open and shared among participating parties enabling verification of digital data and online transactions whether financial or non-financial have entered into the mainstream digital world. This technology known as ‘blockchain’ allows every individual in the ‘chain’ to personally verify the presence of data in the ledger without having to rely on the word of a few² or a third party. This is one of the promising features of blockchain that has enabled its swift acceptance around the world from venture capitalists to governments as well as any field perceivable which requires security and privacy of assets.

Blockchains usage cases expand into many application contexts across banking and finance, capital markets, trade finance, regulatory compliance and audit, supply chain management, healthcare, real estate, media, energy, government, record management, cyber security, data storage and Internet of Things etc³. This wide array of applicability into every aspect of modern life would be rather beneficial to innovation and development of society.

However, with the great benefits which could be derived from blockchains there are fundamental issues when it comes to regulatory compliance and the application of law. As blockchain technology is dependent on the fundamental concepts of ‘distributed consensus’ and ‘anonymity’, the regulatory issue becomes a difficult

subject for lawmakers to tackle. At the one end of the spectrum are those calling for “data sovereignty” which the blockchain technology is heralded⁴. Nevertheless, there are issues when concerned with potential criminal liability through the usage of blockchain. This requires the intervention of a regulatory authority despite the relative nature of the technology and its use cases.

This research aims to understand blockchain technology from a regulatory perspective on how governments and regulatory authorities could address the “un-regulatory” nature of blockchain in the enactment and enforcement of relevant laws and regulations.

II. LITERATURE REVIEW

First introduced in 2008 as the backbone distributed ledger of ‘Bitcoin’ cryptocurrency, the Blockchain technology is a digital software which removes any third party such as the government or any institution on handling and verifying data⁵. This allows individuals with a basic internet connection to complete transactions with full anonymity and security without worrying about regulatory laws. Due to the secure environment it provides for the end-users more and more governments and institutions such as banks, logistic companies and others are relying on it than ever before. The current trend shows that investment in blockchain technology in 2021 was at 6.6 billion US dollars with a highest distribution of the market value within the banking sector and cross-border payments and settlements. It is predicted that between 2019 to 2025 the global blockchain market will grow over 69%⁶. With its

promising capabilities in the exponential growth of industries, Blockchain technology, according to the World Economic Forum, is stated as the fourth industrial revolution⁷.

Due to the wider usage capability of the blockchain technology there are rather many misgivings due to the lack of regulatory and legal issues. One such instance could be seen from the widely used 'Bitcoin' and other cryptocurrencies stemming from this technology. According to the 2015 report by the Financial Action Task Force within a duration of just 6 years hundreds of millions of dollars were laundered for criminal organisations through this technology. Moreover, due to the nascent-ness of the technology, it is exposed to a lot of vulnerabilities involving a high number of cyber related crimes. The lack of a regulatory and legal framework does indeed play its part in allowing this to happen.

To date there have been governments and international agencies showing interest in regulating blockchain technology related issues particularly the interest on regulating crypto or virtual currencies aspect of the technology. It has been found that despite the new nature of the technology and the vast scope of blockchain technologies usability some authorities investigate whether the activities within the blockchain complies with traditional laws⁹. However, this model of regulation simply disregards the widespread applicatory nature of blockchain. Thus, impeding innovation and technological advancement. Whereas the blockchain technology with its features such as the ability to record transactions on the blockchains distributed ledgers could be used by regulators to their advantage in formulating laws such as prevention of fraud and improving transparency¹⁰.

There are many countries that have made a blanket criminalisation approach towards cryptocurrencies and have outright banned them. When looking at the regulatory lacunas related to blockchain technology, it is identified that governments and lawmakers are hindered with lack of knowledge and the right approach to tackle the issues.

In one such instance it is mentioned that researchers in Germany found illicit images on Bitcoin's blockchain and the authorities were in doubt on the application of the correct law or how the current legal procedures and sanctions ought to be without endangering the

potentiality of the technology¹¹. A legal way forward in dealing with blockchain technology is imperative in this regard.

It is found that some regulatory actions taken by the European Union and the United States have adversely impacted on the innovation front of these new technologies despite having a hands-off approach boding well for a large extent¹². In France a blockchain-specific legislation has been introduced yet the main focus of the legislation is on financial instruments. The European regulatory framework on blockchain is much vague¹³.

Möslein suggests a scenario, based on the application of current laws when it comes to smart contracts created by the blockchain there are two strategies that could be utilised, the first theory is handing over the task of legal recognition to the judiciary, where they would have to take on each claim case by case basis in accordance with the laws, which is reliable yet examining each and every single case for their legality would prove difficult for judges. The second approach would be to comply with the general principles of contract law, this approach would not require a special legal regime as regardless of the means of the contract, the content is valued against a given set of preconditions, or in other words to a generally accepted legal principle. The latter concept of formulating laws to address a legal situation based on general principles would prove to be much more effective than attempting to specifically address every advancement.

Therefore, whether to enact new laws and regulations to address these issues or to assess how existing legal regulations could address these issues need to be understood as it is currently considered as a missing step¹⁴ when it comes to blockchain technology. According to the Organisation for Economic Cooperation and Development, the role of governments in regulating and shaping policy would play an important role in addressing the issues related to blockchain technology.

These regulatory frameworks would decide on the sustainability and viability of this new innovative technology¹⁵. Whether the technology related to blockchain is addressed through a specific legislation or through general legal principles, these legal impediments and implications need to be addressed at an early stage. A regulatory approach is necessary at an

early stage of this technology due to the malleable nature of technological development. With new technological developments the laws would have to adapt to the changing circumstances¹⁶.

Thus, a balance is required that would not hinder the progression of innovation as well as regulatory and legal issues that come with it. As this is a relatively new technology there are still gaps in academic literature addressing this issue of regulating blockchain technology.

III. OBJECTIVES AND METHODOLOGY

The primary objective of this study would be to identify existing literature on regulation of blockchain technology and aims to identify the areas it relates to address the implications related to the compliance with the law. Thus, premised on the initial research questions this research will provide a guideline for the regulatory authorities in the way-forward with regards to addressing respective issues. firstly, on the current regulatory frameworks in place in regard to blockchain technology and secondly, regarding the primary areas the regulatory authorities would have to address blockchain technology and for its compliance to law. A qualitative research methodology is used for this research by utilising description and exploratory study approaches. Furthermore, a doctrinal analysis approach will be used for content analysis as primary data will be collected from regulatory guidelines, databases, journals and books. These approaches will enable identifying relevant data and perform the examination and analysis required to address the research questions.

IV. FINDINGS

It is found in this research that several countries have implemented regulations related to blockchain technology. However, the main focus of the countries so far is to regulate the operation of cryptocurrency exchanges. In this regard the Securities Exchange Commission (SEC) of the United States of America has provided guidance on the current existing securities laws that would apply to cryptocurrency and initial coin offerings under the blockchain¹⁷. Further, the Commodity Futures Trading Commission (CFTC) of the United States has taken jurisdiction over any futures and derivatives markets involving blockchain technology¹⁸. This is also seen to be the case where the Bank for International Settlements (BIS) has also confirmed to provide guidance on the application of prudential standards to banks¹⁹ engaging in activities

related to blockchain technology²⁰. Furthermore, it has to be mentioned that there were several enforcement actions taken against some companies for contravention of these regulations in the US. It has to be noted that the Financial Crimes Enforcement Network (FinCEN) of the United States has already implemented anti money laundering and counter-terrorism financing regulations involving the blockchain technology²¹.

In this regard countries such as Japan the very first country to regulate crypto assets²² and South Korea have also passed licensing systems for cryptocurrency exchanges and have implemented regulations to prevent money laundering and other illegal activities through the blockchain cryptocurrency exchanges²³. Unlike the above-mentioned regulation of cryptocurrency, the paradigm of regulating blockchain technology extends further to include personal data stored in blockchains under the European Union's General Data Protection Regulation (GDPR). This regulation issues guidelines on the collection, storage and use of personal data and its protection and any other related data using blockchain technology including virtual currencies and its exchanges²⁴. Yet more laws need to be brought in to regulate blockchain related data and activity given the vast usage case in security and seamless reachability of the blockchain technology by everyday citizens and governments. Countries such as China have already been using a central bank digital currency solely from blockchain technology²⁵ and have been actively promoting the usage of this technology in supply management in businesses and other industrial use cases. Other countries such as the United Arab Emirates have been engaged in the blockchain to provide various services for their citizens such as providing digital identities and land registration and other various government services through blockchain technology²⁶.

V. RECOMMENDATIONS ON AREAS FOR REGULATORY LAWS FOR THE BLOCKCHAIN TECHNOLOGY

This study found that there are 6 primary areas for the regulatory bodies to focus in enacting laws and regulations related to blockchain technology.

1. Consumer protection laws and regulations: As blockchain technology is heavily used in consumer related activities such as providing digital wallets and other means of accessing personal data, and by its nature as blockchain technology is decentralised, making it difficult to identify bad actors and to hold them accountable for the fraudulent activities,

regulators should focus on the protection of consumers from fraudulent activities and other related potential harms.

2. Data privacy laws and regulations: Blockchain technology often uses personal data in different aspects of providing their services, thus regulators need to ensure that these data are used in accordance with data privacy laws and regulations and other international data privacy protection standards.
3. Cybersecurity laws and regulations: As any type of technology, blockchains are also prone to cyber-attacks such as hacking and other cyber threats. For this reason, the regulators must ensure that it is regulated in a way for the service providers to ensure that appropriate safeguards are in place to protect from these threats.
4. Anti-money laundering laws and regulations and countering the financing of terrorism: Blockchain technology is sometimes used in cases of money laundering and financing terrorist activities around the world due to its nature of anonymous transaction potential. For this reason, the regulators must ensure that the use of blockchain technology is not used to objectively fund terror activities and other financial fraud through its use. Implementing current regulatory measures such as know-your-customer (KYC) and anti-money laundering measures could help to mitigate potential future abuse of the technology.
5. Securities laws and regulations: Blockchain technology is most commonly known for its provision of coin offerings and security token offerings such as Bitcoins and other such electronic monetary exchange systems. For this reason, it is important for the regulators to ensure that the technology is used in accordance with the securities laws and ensure the disclosure and registration of the activities conducted by specific blockchain exchanges to prevent misuse of the technology.
6. Financial stability related laws and regulations: Blockchain technology has the potential to cause disruption to the stability of the existing financial systems. For this very reason and to ensure the overall stability of the financial system of any country it is rather necessary for the regulators to ensure that blockchain technology does not pose a risk to the financial stability of the country. It has to be ensured that the technology is used in a consistent manner that would not endanger the financial system. By providing regulatory guidelines for the development and implementation

of services based on this technology the risk could be mitigated.

VI. CONCLUSION

It has to be noted that despite the nature of this evolving technology and regulatory bodies having a difficult time figuring out the best approach to this technology, Blockchain technology is seen as a revolutionary technological leap with the potential to benefit a wide range of industries by providing a decentralised secure means to store and transfer data with increased transparency and with reduced costs. The technology provides more secure transactional benefits than other means available. Thus, in the near future this technology is expected to revolutionise the business and social exchanges in the world. From finance to supply chain management to voting systems to medical advancements, this technology could benefit human society extensively. However, it has to be noted that there are risks related to regulatory issues of misuse of this technology by bad actors. For this reason and as blockchain technology is used in a wide range of industries and these industries are already somehow provided with a regulatory guideline in different countries it is important to ensure that any potential use of blockchain technology in any specific industry or service falls within the regulation or is actually guided by the regulation to prevent misuse and other fraudulent risks related. Furthermore, by providing clear regulatory parameters to ensure the innovation of the blockchain technology will not be hindered rather would pave a way forward for the developers when they are aware of the legal landscape related to this technology and would encourage further advancements and investments in blockchain technology compliant to laws and regulations.

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