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Legal Issues in the Use of Blockchain in Finance Transactions

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ABSTRACT

Blockchain is a sophisticated bookkeeping technology which can effectively record transactions between two parties in a peer-peer network. Blockchain introduces a new regime of online transactions through a network of participants rather than through a centralized computer in a traditional computer-based ledger system. This technology is foundational in nature. Therefore, it has various applications by way of cryptocurrencies and smart contracts among others. However, due to its unique nature, Blockchain also faces numerous legal issues. This article attempts to trace and analyze the legal implications in the adaptation of blockchain technology.

I. INTRODUCTION

“The Real problem is not whether machines think but whether men do.”

— **B.F. Skinner**

Blockchain is a distributed ledger technology that functions through a peer-peer network. It comprises of a distributed database which functions as a ledger.² In other words, Blockchain is nothing but a sophisticated bookkeeping technology which can efficiently record transactions between two parties in a network. In a blockchain the recordable data, which is stored in ‘blocks’ is chained to form a comprehensive record of information.³ This is different from a traditional ledger system (computer based) as it is maintained by a network of participants (nodes) rather than a centralized computer. This decentralization is one of the core features of Blockchain. It eliminates the need for third party intermediaries in a transaction, in addition to increasing the creditably and security of the data.⁴ In fact, any

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² Nathan Reiff, *Blockchain Explained*, INVESTOPEDIA (Dec 20, 2020, 12:00 PM), <https://www.investopedia.com/terms/b/blockchain.asp>

³ Rabindra Kumar Mitra, *Blockchain Technology: Importance of Transnational Laws and Jurisdictional Issues in Blockchain Dispute Resolution*, THE RMLNLU LAW REVIEW BLOG <https://rmlnlulawreview.com/2019/02/26/blockchain-technology-importance-of-transnational-laws-and-jurisdictional-issues-in-blockchain-dispute-resolution/>

⁴ Marco Iansiti and Karim R. Lakhani, *The Truth About Blockchain*, HARVARD BUSINESS REVIEW (Dec 20, 2020, 12:00 PM) <https://hbr.org/2017/01/the-truth-about-blockchain>

addition or change to the data in the blockchain can only be made after it is authenticated by all the nodes in the network. The authenticated change is then automatically updated in all the other nodes. Therefore, a hacker would have to hack all the systems in the network in order to tamper with the system.⁵

Blockchain technology was originally introduced in October 2008 as a part of the proposal for Bitcoin, a virtual currency which generated quite a lot of buzz in the financial sector over the last decade.⁶ Blockchain technology forms the bedrock for cryptocurrencies, as it permits them to operate without the need for a centralized authority in addition to reducing the risks involved in the transaction and eliminating the transaction fee (if any) applicable to the transaction.⁷ Cryptocurrency is without doubt the most revolutionary application of the blockchain technology. However, the nature and scope of the blockchain technology exists beyond its application in cryptocurrencies due to its ubiquitous nature. Blockchain is a foundational technology that can be applied in various areas of the finance sector.⁸

A 'Smart Contract' is one such application of Blockchain, which is arguably the most transformative implementation of the system. These contracts are self-executing and can be controlled online.⁹ They are "smart" because of their ability to automatically trigger transactions and execute the obligations without the intervention of any third parties. These contracts are embedded in a digital code and stored in transparent databases where they are protected from any kind of revision, tampering and deletion. It is however important to note these smart contracts cannot be terminated unless there is an option for termination coded into the software.¹⁰

Despite its numerous advantages, these smart contracts have a huge potential for lengthy litigations in the future. The most serious issue with smart contracts are its lack of legal recognition. This is primarily due to the difficulty in proving an informed consent between the parties as the agreement is embodied in a code rather than in words.¹¹ Furthermore, the

⁵ Elizabeth S. Ross, *Nobody Puts Blockchain In A Corner: The Disruptive Role of Blockchain Technology In The Financial Services Industry And Current Regulatory Issues*, 25 CATH. U.J.L. & TECH. 353, 360-61 (2017).

⁶ Saran Singh Sound, *The rise of Blockchain and Cryptocurrency*, MS&E 238 BLOG (Dec 20, 2020, 12:00 PM), <https://mse238blog.stanford.edu/2017/07/ssound/the-rise-of-blockchain-and-cryptocurrency/>

⁷ Supra.

⁸ Fulmer, Nathan (2019) *Exploring the Legal Issues of Blockchain Applications*, Akron Law Review: Vol. 52: Issue.1, Article 5.

⁹ Adam Hayes, *Is Ethereum More Important than Bitcoin?*, INVESTOPEDIA, (Dec 20, 2020, 12:00 PM) <https://www.investopedia.com/articles/investing/032216/ethereum-more-important-bitcoin.asp>

¹⁰ Reggie O'Shields, *Smart Contracts: Legal Agreements for the Blockchain*, 21 N.C. BANKING INST. 177, 179 (2017).

¹¹ Supra n 7.

enforceability of smart contracts is a bit problematic due to the difference in the principles of contract law used across different nation states.¹²

Some of the other issues involved with the effective implementation of Blockchain at large are as follows:

1. **Jurisdictional issues:** The jurisdictional issues in the framework of Blockchains are arguable the biggest issue behind the resistance in its implementation. The core-idea behind the blockchain is the distribution of ledgers amongst a network of nodes, without any concrete evidence to pinpoint the exact location of the nodes. This feature of the blockchain causes complex jurisdictional problems primarily due to the conflicting legal frameworks and the absence a '*residence*' due to the lack of a physical ledger.¹³ It can also potentially pave way for litigation amongst the parties in multiple jurisdictions. Furthermore, the lack of '*trusted*' third party intermediaries, which is the greatest forte of Blockchain technology more often than not ends up being a double edged sword and causes a lot of adjudicatory issues due to the lack of intermediates also results in the lack of an authority which settles the disputes arising amongst the parties. Due to this absence of the 'third party' intermediaries, the parties have to rely on external agencies to adjudicate any issues which may arise.¹⁴ There is still a lack of clarity in the method for determining the '*residence*' and the forum to adjudicate a dispute on Blockchain. It is still undecided as to whether the adjudication forum would be located in the location of the parties to the dispute or in the location of the relevant nodes.¹⁵ Additionally, the application of Blockchain in the 'Internet of Things' makes things much more complicated due to its extra-territorial nature which may be considered to be a threat to the traditional concept of sovereignty. Hence, it would be a herculean task for any nation state to implement its laws against a blockchain based transaction due to its cross-border presence.¹⁶
2. **Regulatory issues:** There are numerous regulatory concerns with the issuance and taxation of virtual cryptocurrencies such as Bitcoins, which raise numerous questions such as the classification of the digital assets in a blockchain. Despite various attempts by the nation states to classify cryptocurrencies as virtual currencies, they are not taxed as

¹²ibid

¹³ Supra note 3.

¹⁴ Supra note 8.

¹⁵ Supra note 3.

¹⁶ ibid.

traditional currencies.¹⁷ Furthermore, it is interesting to note the confusion of amongst numerous jurisdictions such as the United States in tackling the various taxation issues in these cryptocurrencies. One such example is the categorization of the acquisition of these Bitcoins by individuals at home through ‘mining’ as a self-employment income by the guidelines of the Internal Revenue Service (IRS) of the United States. But, if a Bitcoin is held a capital asset, a capital gain tax could be realized.¹⁸ Due to these various concerns and the lack of clarity in the application of cryptocurrencies, the Reserve Bank of India passed a circular in April 2018, prohibiting the usage of virtual currencies. This prohibition by the RBI is extremely problematic as the RBI pushed the entire cryptocurrency economy underground rather than dealing and sorting out the regulatory issues in it.¹⁹ This Circular was finally quashed by the Indian Supreme Court on 04.03.2020 in the case of *Internet and Mobile Association of India v. Reserve Bank of India*²⁰. The Supreme Court ruled that the prohibition was disproportionate and was thus ultra-vires the Indian Constitution. It was held that RBI had the power to regulate the usage and circulation of cryptocurrencies in India. However, in the absence of such regulatory framework, any dealing with these currencies would be treated a legitimate trade under the purview of Article 19 (1) (g) of the Indian Constitution.²¹ There are no regulations in place for the usage of cryptocurrencies in India. Hence we are yet to see the Indian interpretation and the regulatory framework of the cryptocurrencies and in extension the usage of Blockchain technology by the Indian authorities.

3. **Pseudo-anonymity, theft and other illegal activities** : Blockchain permits its users to enter into various transactions in an anonymous fashion through the use of virtual currencies like bitcoin free from governmental regulations. This promise of freedom of freedom and anonymity has the potential to pave way for many illegal activities like money laundering, tax evasion and data theft among other things.²²

¹⁷ Supra n 7.

¹⁸ Elizabeth E. Lambert, Note, The Internal Revenue Service and Bitcoin: A Taxing Relationship, 35 VA. TAX REV. 88, 14-15 (2015-2016).

¹⁹ RBI/2017-18/154 DBR.No.BP.BC.104 /08.13.102/2017-18 <https://rbidocs.rbi.org.in/rdocs/notification/PDFs/NOTI15465B741A10B0E45E896C62A9C83AB938F.PDF> (last visited 30 November 2020).

²⁰ Writ Petition (Civil) No.528 of 2018 https://main.sci.gov.in/supremecourt/2018/19230/19230_2018_4_1501_21151_Judgement_04-Mar-2020.pdf, (Nov 30, 2020, 01:20 PM).

²¹ Suhrith Parthasarathy, Decoding the Supreme Court’s Cryptocurrency Judgement, BLOOMBERG QUINT (Dec 20, 2020, 12:00 PM) <https://www.bloombergquint.com/opinion/decoding-the-supreme-courts-cryptocurrency-judgment>

²² Supra note 3.

4. **Technological issues** : In a Blockchain platform, especially in smart contracts, any loopholes or technical failures in the software or the code of the contract has the potential to cause unmitigated damages to the users.²³ The absence of a centralized figure also creates a difficult in pinpointing liability in a dispute especially in cases where there is a malfunction or data theft.²⁴ There is still a lack of clarity as to whether it should be the parties or the software developer or the network of nodes itself who should be held liable in cases of such failures.²⁵ Furthermore, the issue of hacking is till a major concern with Blockchain. Despite the fact that the issue of hacking in a blockchain system should not exist theoretically, it poses a huge risk to the security of both the smart contracts and the financial transactions which take place through the blockchain. Furthermore, the absence of a centralized system makes difficult to tract criminal behaviors and recover personal data in case of data theft or tampering.²⁶

II. CONCLUDING COMMENTS

Blockchain technology without doubt created a revolution in the finance sector. It is a fundamental technology with numerous applications. It is however not without any limitations. These limitations can however easily be overcome through the enactment of an international legal framework specially drafted for blockchain transactions through an international consensus. Such a framework would solve most on these issues such the multiple jurisdiction and adjudicatory issues with the blockchain technology which restrict its effective usage.

²³ Supra.

²⁴ Reggie O'Shields, Smart Contracts: Legal Agreements for the Blockchain, 21 N.C. BANKING INST. 177, 179 (2017).

²⁵ Supra n 7.

²⁶ Rohit Gupta, *Hacking into Blockchain: Is Blockchain Security a Concern?* PLUG AND PLAY (Dec 20, 2020, 12 PM), <https://www.plugandplaytechcenter.com/resources/hacking-blockchain-blockchain-security-concern/>