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LEGAL ASPECTS OF BLOCKCHAIN TECHNOLOGY IN INDIA

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ABSTRACT

The advent of blockchain technology marks a game-changing innovation. Applications of blockchain technology range from cryptocurrencies to banking, healthcare, governance, logistics, and administration. While India lacks specialised blockchain legislation, the technology is governed through the existing legal framework, which includes the Information Technology Act 2000, Digital Personal Data Protection Act 2023, tax law, anti-money laundering laws, and judicial precedents. This research paper examines the legal regime governing blockchain technology in India. More specifically, this paper will examine issues surrounding smart contracts, cryptocurrency regulation, data protection and challenges posed by decentralised and immutable digital records. It further analyses government initiatives, such as public governance using blockchain technology, as well as RBI's Digital Rupee project, illustrating a changing regulatory approach of India towards the use of blockchain technology. Moreover, this paper will address emerging issues in digital asset management, decentralised finance (DeFi), artificial intelligence (AI), and Internet of Things (IoT).

KEYWORDS: Blockchain technology, Digital Personal Data Protection Act, 2023, Information Technology Act of 2000, Decentralised finance (DeFi) etc.

INTRODUCTION

The invention of blockchain technology may be referred to as the most revolutionary development in the history of the digital world because it has radically reshaped the way data storage, validation, and transactions were carried out before. The idea of the technology was first introduced in connection with the cryptocurrency known as

Bitcoin back in 2008; however, today blockchain has found its practical application in various areas such as finance, health care, education, logistics, governance, etc¹.

In the last ten years, the use of blockchain technology in India has become increasingly widespread due to digital transformation projects, innovations within the financial industry, and experiments conducted by the Indian government with regard to public governance.

Even though blockchain is an open, global, and decentralized technology, it still has certain legal aspects. Issues related to e-documents, smart contracts, tax system, data privacy, financial regulation, and cybersecurity seem to be particularly important when it comes to blockchain regulation. There is no separate blockchain law in India yet, but blockchain remains regulated anyway.

BLOCKCHAIN LAW IN INDIA

There is no dedicated law on blockchain in India as an independent statute. It operates under a system of laws which cover areas of technology, financial services, taxation, and anti-money laundering. This trend is followed worldwide as well. Law in India makes a distinction between blockchain technology and crypto assets. Those who use blockchain technology for recordkeeping or enterprise automation purposes do not have to deal with many restrictions. However, blockchain technology applications related to cryptocurrencies attract more attention. These include the IT Act, Anti-Money Laundering Prevention Act, tax laws, and sector-specific laws. Courts make a huge contribution to interpreting how traditional concepts of law work in relation to a decentralized system. The reason why blockchain attracts attention in terms of law is its ability to create immutable records, automatic performance of contract terms, trade in digital assets, and safe audit trails. At the same time, it poses challenges to legal frameworks.

EXISTING LEGAL FRAMEWORK GOVERNING BLOCKCHAIN IN INDIA

It is still true that India does not have a comprehensive law that specifically deals with

¹ Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System* (2008), <https://bitcoin.org/bitcoin.pdf>; Melanie Swan, *Blockchain: Blueprint for a New Economy* 1–15 (O'Reilly Media, Inc. 2015).

blockchain technology. Therefore, the blockchain transactions are governed by a range of laws and regulations.

The Information Technology Act 2000² recognizes digital documents and transactions as legally binding in India, which can be said to be the foundation for blockchain transactions. The blockchain document can be taken as an electronic document under the above act although the act does not recognize blockchain separately.

- **Legal Enforceability and Smart Contracts³**

The other revolutionary application of blockchain technology is the use of the smart contract. Smart contracts are computer programs that, when specific conditions are fulfilled, will automatically perform the obligations of the contract. The smart contract increases productivity and reduces transaction costs through its reduction in dependency on intermediaries.

However, the smart contract continues to operate within the framework of traditional laws despite its advanced nature. Just because the smart contract is automatic, it cannot be binding if it facilitates an illegal agreement. The legal questions that surround the smart contract include jurisdiction, bugs in the code, contract interpretation, and dispute resolution. This is an area of emerging law since the Indian court system has yet to develop substantial jurisprudence around the concept of the smart contract.

- **Blockchain and Cryptocurrency Regulation**

The link between cryptocurrencies and blockchain technology has made a significant contribution to the regulatory debate in India. While blockchain technology is viewed in a largely favorable light, there are concerns associated with cryptocurrencies related to consumer protection, financial stability, and illegitimate finance⁴.

The reversal of the banking restrictions imposed by the Reserve Bank of India on cryptocurrency firms in the case of *Internet and Mobile Association of India v.*

² Act No. 21 of 2000

³ Nick Szabo -- Smart Contracts: Building Blocks for Digital Markets, https://www.fon.hum.uva.nl/rob/Courses/InformationInSpeech/CDROM/Literature/LOTwinterschool2006/szabo.best.vwh.net/smart_contracts_2.html.

⁴ Shubham Malhotra, *Blockchain Law in India: Regulations, Risks and Use Cases*, VIDHISASTRAS (Dec. 16, 2025), <https://vidhisastras.com/blog/a-beginners-guide-to-understanding-blockchain-law-in-india-regulations-risks-and-use-cases/>.

*Reserve Bank of India (2020)*⁵, by the Supreme Court of India, was a landmark decision. This ruling paved the way for a comeback of bitcoins under the doctrine of proportionality.

BLOCKCHAIN SYSTEMS' DATA PROTECTION ISSUES

The introduction of the Digital Personal Data Protection Act, 2023⁶ has brought about a new approach in Indian blockchain laws. While dealing with personal data, the law gives prominence to ideas such as responsibility, consent, and data minimisation. There might be a possible conflict between blockchain and data protection due to the immutable nature of blockchain. It is not easy, technically, to delete or alter any personal information once they have been uploaded to the blockchain. It would seem as if requests for the erasure or correction of personal data had been fulfilled.

Several companies have resorted to adopting hybrid models where personal data is kept off-chain while hashes of the personal data are stored on the blockchain.

GOVERNMENT ACTIVITIES AND POLICIES

The Indian government encourages developments in the field of blockchain technology. For example, some state governments are implementing blockchain pilot projects concerning land records, certifications, and welfare schemes. The Ministry of Electronics and Information Technology encourages developments in the sphere of blockchain technology research and development. Security, interoperability, and responsible usage are recommended. All the mentioned examples show the positive approach toward technology but not its prohibition. The introduction of blockchain technology in the public sphere leads to increased legality. It confirms the regulation of technology usage and shows trust to blockchain in non-financial areas. Thus, the Indian government seeks to support the further development of blockchain technology within the country. The Indian government actively introduces blockchain technology. In 2016, the Indian government initiated the "Digital India" project to provide

⁵ Internet and Mobile Association of India v. Reserve Bank of India 2020 INSC 264

⁶ Digital Personal Data Protection Act, 2023, Act No. 22 of 2023

government services electronically to all citizens of the country⁷. It aims to provide the connection to high-speed internet infrastructure and increase digital literacy among the rural population. Blockchain technology development is one of the priorities of the Indian government and it finances it through different governmental organizations, for instance, Department of Science and Technology⁸.

CURRENT ADVANCEMENTS AND RECENT TRENDS

The blockchain ecosystem in India has seen various developments due to certain events.

- For one, pilot programs involving India's CBDC, the Digital Rupee, have been undertaken in India by the Reserve Bank of India. This development proves the willingness of the government to utilize distributed ledger technology within a regulated setting, although CBDCs are drastically different from decentralized cryptocurrencies⁹.
- Moreover, a handful of state governments are exploring the potential of using blockchain in governmental processes, credential authentication within educational institutions, and property documentation. Such endeavors are expected to boost efficiency, reduce corruption, and ensure transparency¹⁰.
- Another factor that has emerged as key is legislators' increased discussion on the need for comprehensive regulation for digital assets. It is evident that future legislation will involve token classification, investor protection, DeFi, and cross-chain operations in blockchain networks, although any blockchain-specific law has not been introduced yet¹¹.
- Finally, novel concerns have arisen in connection with blockchain's growing integration with emerging technologies such as artificial intelligence and IoT in regard to liability, accountability, and algorithmic governance¹².

⁷ <https://www.digitalindia.gov.in/about-us/>.

⁸ *Microsoft Word - 4-CRD2506*, (Dec. 5, 2024), <https://journalcrd.org/wp-content/uploads/4-CRD2506.pdf>.

⁹ Reserve Bank of India, *Concept Note on Central Bank Digital Currency* 1–51 (2022), <https://www.rbi.org.in/Scripts/PublicationReportDetails.aspx?ID=1218>.

¹⁰ Arnab Kumar, *Blockchain The India Strategy Part I*, (Mar. 13, 2020), https://niti.gov.in/sites/default/files/2020-01/Blockchain_The_India_Strategy_Part_I.pdf.

¹¹ Ministry of Finance, Government of India, Responses in Lok Sabha and Rajya Sabha on Regulation of Virtual Digital Assets and Cryptocurrency (2022–2025), <https://www.finmin.gov.in>; see also Parliamentary Standing Committee Discussions on Crypto Assets and Digital Finance.

¹² World Economic Forum, *Redesigning Trust: Blockchain Deployment Toolkit* (2020), <https://www.weforum.org/reports/redesigning-trust-blockchain-deployment-toolkit>; Organisation for

