

16 February, 2021

To:

Dr. B K Murthy
GC (R&D in IT and NKN)
Ministry of Electronics & Information Technology,
Government of India,
New Delhi.

Dear Sir,

Subject: Ikigai Law's comments on the Draft National Strategy on Blockchain

We are writing to share our comments to the Draft National Strategy on Blockchain (“**Draft Strategy**”) released in January 2021.

We thank the Ministry of Electronics and Information Technology (“**MEITY**”) for giving us this opportunity to submit our comments to the Draft Strategy. We are grateful to the MEITY for identifying the potential of blockchain technology and for taking steps towards its adoption in India.

We are an award-winning law and policy firm with a sharp focus on technology and innovation. We specialize in representing technology companies with new business models, and work extensively with the Indian start-up ecosystem. Our comments to the Draft Strategy are informed by our extensive experience of working with Indian blockchain companies. We were counsels to Zebi Data India, a blockchain solutions company that was working with the Government of Andhra Pradesh on its plans to implement land records management on the blockchain. We represented Elemental Labs, a blockchain solutions development company, in its investment round from Matrix Partners and on several blockchain implementation contracts. We assisted the [World Economic Forum](#) in proposing a legal framework for smart contracts in India, and authored a chapter on Indian data privacy law and blockchain for a report published by the International Association of Trusted Blockchain Applications. We also advised the NITI Aayog on the legal aspects of certain use cases for blockchain in India, including electronic health records and land records. We also write extensively about these issues on our [blog](#) and [social media](#).

The Draft Strategy makes excellent recommendations which will go a long way to drive innovation and boost the adoption of blockchain based solutions in India. However, we feel that there are certain aspects in which the Draft Strategy can be further improved. In particular, we have identified the following areas: i) the need for exemptions to data localization requirements; ii) the possibility of blockchain being viewed as a privacy enhancing technology; iii) the importance of approaching the blockchain opportunity from a global perspective; iv) the need for harmonization across regulators; and v) the need for greater clarity on the role of different stakeholders.

Our detailed comments on the Draft Strategy are appended as an Annexure to this letter. We would be happy to continue to assist you in your deliberations with inputs and research support. Please do not hesitate to reach out to me on my email id in my signature.

Yours truly,

Nehaa Chaudhari

Partner

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ANNEXURE

IKIGAI LAW'S COMMENTS ON THE DRAFT NATIONAL STRATEGY ON BLOCKCHAIN

1. Need to revisit data localisation

- 1.1. The Draft Strategy correctly identifies that since data is automatically stored across all nodes on a blockchain network, data localization would be a challenge to blockchain adoption.¹ In general, data localisation requirements may have unintended consequences on the Indian economy. This is because restrictions on cross-border flows of data will deprive the Indian economy of the significant contribution of data-led economic growth. A 2019 study by the Indian Council for Research on International Economic Relations (ICRIER) has found that an increase of 1% in the capacity of data flows between India and other countries² leads to an increase of USD 696.71 million in the total volume of goods trade for India.³ This is true not just for India, but also for the world at large, as is evidenced by a 2016 McKinsey report which has found that data flows have increased world GDP by 10.1%.⁴
- 1.2. Blockchain's business value-add is projected to grow to \$176 billion by 2025.⁵ If strict data localization is mandated, it may hamper India's potential to leverage this opportunity.
- 1.3. The Draft Strategy identifies that if data localization requirements are imposed under the Personal Data Protection Bill, 2019 (PDP Bill); it will be a challenge for implementing a national level blockchain.⁶
- 1.4. We recommend that the MEITY consider revisiting its stance on data localization given its likely impact on the development of new and emerging technologies, like blockchain. The government should consider an exemption from localization in the case of technologies which rely on distributed storage as a security enhancing feature.

2. Blockchain can be a privacy-enhancing technology

- 2.1. The Draft Strategy suggests that blockchain fundamentally raises privacy concerns.⁷ While there is some truth to this understanding, recent research has demonstrated that blockchain can actually be seen as a privacy-enhancing technology.
- 2.2. According to a E.U. study, blockchain can offer benefits from a data protection perspective, if blockchain is purposefully designed to do so. Also, blockchain may offer new forms of data management that provides benefits to the data-driven economy and enable individuals to have more control over personal data that relates to them.⁸ Organizations across the globe have identified solutions that support privacy features on blockchain. We have discussed some of these below.

¹ Page 18, Draft Strategy, https://www.meity.gov.in/writereaddata/files/NationalStrategyBCT_%20Jan2021_final.pdf

² Referred to as 'international internet bandwidth' under the ICRIER report. International internet bandwidth refers to the contracted capacity of international connections between countries for transmitting Internet traffic; see International Internet Bandwidth (Mbps), Data Catalog, World Bank, <https://datacatalog.worldbank.org/international-internet-bandwidth-mbps-0>.

³ Economic Implications of Cross-Border Data Flows, ICRIER, Box ES.1, Page 3, dated November 2019, http://icrier.org/pdf/Economic_Implications_of_Cross-Border_Data_Flows.pdf.

⁴ Digital globalization: The new era of global flows, McKinsey & Co., February 2016, <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/digital-globalization-the-new-era-of-global-flows>.

⁵ Saiful Khandaker, How blockchain is transforming cross border payments, Forbes; <https://www.forbes.com/sites/forbestechcouncil/2019/03/12/how-blockchain-is-transforming-cross-border-payments/?sh=60a03ca57df2>

⁶ Page 18, Draft Strategy.

⁷ Page 17, Draft Strategy

⁸ Blockchain and the GDPR, Can distributed ledgers be squared with European data protection law? European Parliamentary Research Service, Scientific Foresight Unit (STOA), July 2019; [https://www.europarl.europa.eu/RegData/etudes/STUD/2019/634445/EPRS_STU\(2019\)634445_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2019/634445/EPRS_STU(2019)634445_EN.pdf)

- 2.3. *Blockchain and consent management*: According to a study conducted by IBM, blockchain can be used to track and manage consent between data subjects, processors and controllers.⁹ For instance, consent taken from individuals can be taken before personal data is stored on a blockchain. Further, consents can be bundled into data structures stored on the blockchain. Data structures are then in one-to-one correspondence with consents and its revisions, which accounts for robust proof of their existence.¹⁰
- 2.4. *Zero-knowledge proof*: A zero-knowledge proof is a protocol between two parties called the prover and the verifier. The prover wants to convince the verifier that she 'knows' the proof of a given theorem without revealing any additional information.¹¹ This technique can be used to ensure that privacy of individuals is not sacrificed on a blockchain.¹²
- 2.5. *Security of personal data*: Blockchain uses cryptography to support transaction confidentiality along with access controls to prevent unauthorized use.¹³ SecureKey, a Canada based identity and authentication service provider uses blockchain to undertake identity authentication while protecting the privacy of individuals. SecureKey has built a blockchain network on which the consumer decides what identity attributes they want to share, when they share and to whom should they share.¹⁴
- 2.6. *Right to be forgotten*: The Draft Strategy highlights that individuals may not be able to exercise 'right to be forgotten'¹⁵ as data is perpetually stored on a blockchain network.¹⁶ Data protection authorities across the world are aware of the challenges that the interaction of data protection laws (which were designed for world with centralized storage) and blockchain. However, several solutions have been suggested which meet the spirit of the laws, including some which have been proposed by the French Data Protection Authority.¹⁷ For instance, the data stored on a blockchain can be made practically inaccessible by deleting the private key which is used to access the data on the blockchain.¹⁸

3. Need to approach blockchain with a global point of view

- 3.1. The Draft Strategy aims to create blockchain standards specifically for India.¹⁹
- 3.2. India's 'Aatmanirbhar Bharat' program aims to build a self-reliant India, while taking global cooperation into consideration.²⁰ Adopting a global point of view on blockchain will help facilitating international transactions and push for a globalized digital economy. It will also help local businesses access global markets.²¹

⁹ Blockchain and GDPR; How blockchain could address five areas associated with GDPR compliance, IBM Security; https://iapp.org/media/pdf/resource_center/blockchain_and_gdpr.pdf

¹⁰ Benchoufi M, Ravaud P. Blockchain technology for improving clinical research quality. *Trials*. 2017;18(1):335. Published 2017 Jul 19. doi:10.1186/s13063-017-2035-z

¹¹ A. De Santis and G. Persiano, "Zero-knowledge proofs of knowledge without interaction," Proceedings., 33rd Annual Symposium on Foundations of Computer Science, Pittsburgh, PA, USA, 1992, pp. 427-436, doi: 10.1109/SFCS.1992.267809.

¹² Establishing blockchain privacy through Zero Knowledge Proof, Wipro; <https://www.wipro.com/blogs/hitarshibuch/establishing-blockchain-privacy-through-zero-knowledge-proof/>

¹³ Blockchain and GDPR-How blockchain could address five areas associated with GDPR compliance, IBM Security; https://iapp.org/media/pdf/resource_center/blockchain_and_gdpr.pdf

¹⁴ About SecureKey; <https://securekey.com/>

¹⁵ According to Clause 20 of the Personal Data Protection Bill, 2019, 'right to be forgotten' is defined as the right of the data principal to restrict or prevent the continuing disclosure of his personal data by a data fiduciary; https://www.prsindia.org/sites/default/files/bill_files/Personal%20Data%20Protection%20Bill%2C%20202019.pdf

¹⁶ Page 18, Draft Strategy.

¹⁷ Solutions for a responsible use of the blockchain in the context of personal data, Commission Nationale Informatique & Libertes, France; https://www.cnil.fr/sites/default/files/atoms/files/blockchain_en.pdf

¹⁸ Page 8, Solutions for a responsible use of the blockchain in the context of personal data, Commission Nationale Informatique & Libertes, France; https://www.cnil.fr/sites/default/files/atoms/files/blockchain_en.pdf

¹⁹ Page 4, Draft Strategy.

²⁰ About Aatmanirbhar Bharat; <https://aatmanirbharbharat.mygov.in/>

²¹ Vinay Gupta, Rob Night, How Blockchain Could Help Emerging Markets Leap Ahead, Harvard Business Review; <https://hbr.org/2017/05/how-blockchain-could-help-emerging-markets-leap-ahead>

- 3.3. Blockchain based solutions can be implemented globally.²² They are not bound by the rules of any country but only the code which underlies the blockchain. As such they can operate at a global level with few hindrances.
- 3.4. Rather than creating Indian standards for blockchain, MEITY should engage with international standards that are being developed by international standard setting bodies such as the International Standards Organization (ISO). An ISO report identifies and assesses known privacy-related risks and offers ways to mitigate them. It also covers the privacy-enhancing potential of blockchain.²³ ISO is also in process of developing more standards for blockchain.²⁴
- 3.5. A similar approach is adopted in the E.U., where the European Commission aims to promote blockchain technology and looks to engage with all relevant bodies globally for creation of blockchain based standards.²⁵
- 3.6. Since this is an emerging field, overly prescriptive standards for blockchain should also leave scope for innovation and should not be restrictive in nature. MEITY should support standards that make way for innovation and allow advancements in the technology.

4. Need for harmonization between approaches followed by the Reserve Bank of India and the government

- 4.1. The Draft Strategy has identified that the Reserve Bank of India's stand on cryptocurrencies as a challenge to blockchain adoption in India.²⁶ It has also been reported that the government is planning to introduce a law to ban private cryptocurrencies in India.²⁷ At the same time, the government has welcomed blockchain based initiatives for governance. For instance, the RBI has launched a regulatory sandbox²⁸ programme, which includes FinTech companies that use blockchain. Similarly, the Telecom Regulatory Authority of India notified the Telecom Commercial Communications Customer Preference Regulations, 2018²⁹ which requires the adoption of blockchain by access providers, i.e., cell/landline network providers to keep unsolicited commercial communication in check. As described in the Draft Strategy, some state governments have also made huge strides in the use of blockchain.³⁰
- 4.2. There is an inherent contradiction in promoting the use of blockchain while at the same time seeking to ban crypto-currencies. This dichotomy will inhibit blockchain innovation in India and will dissuade Indian companies from participating in developing blockchain solutions.
- 4.3. It is important to highlight that crypto tokens are essential for public-permissionless blockchains.³¹ Permissionless blockchains are not run by a central authority, and there may not be an incentive for peers in a blockchain network to verify the information to execute a transaction on the network, or to maintain the computers or nodes in a blockchain network. To resolve this issue, cryptocurrency is

²² Blockchain: The India Strategy – Part 1, NITI Aayog;

https://niti.gov.in/sites/default/files/2020-01/Blockchain_The_India_Strategy_Part_I.pdf

²³ Report [ISO/TR 23244](#), Blockchain and distributed ledger technologies – Privacy and personally identifiable information protection considerations.

²⁴ Clare Naden, Getting Big on Blockchain, ISO; <https://www.iso.org/news/ref2540.html>

²⁵ European Commission Blockchain Strategy; <https://ec.europa.eu/digital-single-market/en/blockchain-technologies>

²⁶ Page 17, Draft Strategy.

²⁷ India to introduce a bill to ban cryptocurrency, The Tribune; <https://www.tribuneindia.com/news/nation/bill-on-cryptocurrency-soon-210220>

²⁸ RBI Regulatory Sandbox; <https://www.rbi.org.in/scripts/PublicationReportDetails.aspx?ID=1161>

²⁹ Telecom Commercial Communications Customer Preference Regulations, 2018;

https://www.trai.gov.in/sites/default/files/RegulationUcc19072018_0.pdf

³⁰ Page 14, Draft Strategy.

³¹ Ghareeb Falazi Et Al., Institute of Architecture of Application Systems, University of Stuttgart, Germany; Process-Based Composition of Permissioned and Permissionless Blockchain Smart Contracts, Proceedings of the 2019 IEEE 23rd International Enterprise Distributed Object Computing Conference (EDOC 2019); https://www.iaas.uni-stuttgart.de/publications/Falazi2019_SmartContractComposition-Process-Based-Composition-of-Permissioned-and-Permissionless-Blockchain-Smart-Contracts.pdf

issued to incentivize the persons who support blockchain transactions and maintain the nodes.³² If India places a ban on private cryptocurrencies, then only permissioned models of blockchain can be explored. Without a cryptocurrency-based incentive system, maintenance of a permissionless blockchain network may not be possible.³³ In permissionless models, anyone can join the network and participate in validation of transactions. Permissionless models are completely decentralized, i.e., transactions are completed without the intervention of any central authority,³⁴ and it is here that the benefits of blockchain are completely realized.

- 4.4. The most rampant innovation in this field is happening in the space of public-permissionless blockchain. This is so because public-permissionless networks do not require extensive investment in infrastructure and are designed to be scalable. We compare public-permissionless blockchain technology to the internet, that allows private developers to build any number of applications (email, chat services, social media, ecommerce) on top of the internet layer. Indeed if public-permissionless blockchains are the internet, then private-permissioned blockchains are akin to a local area network or home wi-fi.
- 4.5. Cryptocurrencies were introduced in 2010 and since the crypto-industry has grown to become a one trillion-dollar industry.³⁵ With enabling regulations, India can take advantage of what is likely to be the biggest economic opportunity of the decade. Other jurisdictions such as Singapore³⁶, Japan³⁷, Netherlands³⁸ and Germany³⁹
- 4.6. We recommend that the MEITY should take the lead in working with other stakeholders such as the RBI and develop a regulatory regime which enables innovation in all types of blockchain applications. A harmonized approach from all regulators will instil confidence in the private sector and encourage widespread adoption of blockchain based solutions which harness the full potential of the technology.

5. Need for clarifications on the role of the industry and other stakeholders in building

- 5.1. The Draft Strategy has proposed a ‘multi-institutional model’ for creating a ‘National Level Blockchain Framework’. It highlights the need to identify the roles of organizations and start-ups in the framework. It also proposes to evolve a legal and regulatory framework for blockchain technology.⁴⁰
- 5.2. However, the Draft Strategy has not specified the role that the industry and startups will have in the formation of the ‘National Level Blockchain Framework’. Also, the Draft Strategy does not mention how the industry will contribute to the National Level Blockchain Framework. The MEITY should

³² Nakamoto, S. (2008). Bitcoin: A peer-to-peer electronic cash system. Available at <https://bitcoin.org/bitcoin.pdf>

³³ The Tokenisation of Assets and Potential Implications for Financial Markets, OECD; <https://www.oecd.org/finance/The-Tokenisation-of-Assets-and-Potential-Implications-for-Financial-Markets.pdf>

³⁴ Page 27, The Tokenisation of Assets and Potential Implications for Financial Markets, OECD; <https://www.oecd.org/finance/The-Tokenisation-of-Assets-and-Potential-Implications-for-Financial-Markets.pdf>.

³⁵ Crypto market cap surges above \$1 trillion for the first time, Reuters; <https://www.reuters.com/article/crypto-currency-int-idUSKBN29C264>

³⁶ Trading in cryptocurrencies is legal and are regulated by the Monetary Authority of Singapore (MAS) under the [Payment Services Act, 2020](#). Cryptocurrency businesses are required to obtain license to operate or carry on cryptocurrency exchanges.

³⁷ Under Japanese law, the ‘crypto assets’ are defined and regulated under the [Payment Services Act, 2009](#) (PSA 2009). All business entities interested in operating Crypto Asset Exchange Services, including Crypto Asset Custody, Services are required to be registered with the Financial Services Agency of Japan (FSA).

³⁸ In May 2020, the Dutch AMLD5 Implementation Act was passed. The Act requires crypto-exchanges and crypto custodian wallet providers to register with the Dutch central bank to offer services in the Netherlands; <https://www.dlapiper.com/en/netherlands/insights/publications/2020/05/attention-crypto-service-providers-you-are-now-regulated/#:~:text=With%20the%20implementation%20of%20AML.D,became%20regulated%20in%20the%20Netherlands.&text=On%2021%20May%202020%2C%20the>.

³⁹ Cryptocurrencies are considered to be financial instruments under the newly enacted ‘[Act on the Implementation of the Amendment Directive to the Fourth EU Money Laundering Directive](#)’. The Act introduces new licensing requirements for cryptocurrency businesses.

⁴⁰ Page 26, Draft Strategy.

adopt a consultative approach in identifying the areas in which the industry can best contribute while creating the national level framework for blockchain.

5.3. While deciding a regulatory framework for blockchain technology, MEITY must undertake widespread stakeholder consultation.
