BLOCKSUITS

Response to Ministry of Electronics and Information Technology's Consultation on the National Strategy on Blockchain

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Authored by,

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To,

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Dear Sir,

Subject: BlockSuits' submission to the public consultation on the National Strategy on Blockchain.

The Ministry of Electronics and Information Technology (MeitY) has invited public response on the National Strategy on Blockchain (**"Strategy"**). India's digital economy has been on the rise, and the application of blockchain in India's governance shall serve as a catalyst for the economy. Our submission to MeitY has been prepared keeping in mind potential applications of blockchain and the legal challenges surrounding such applications. The Strategy has outlined certain legal challenges in adopting blockchain; however, we at BlockSuits' believe that the technology has overcome such challenges by way of alternative mechanisms, some of which we have highlighted in our submission.

We have further highlighted the opportunities that MeitY has not considered in the Strategy and how such missed opportunities shall be resolved by setting up a Blockchain Working Group. We further describe the regulatory regime of other jurisdictions such as Singapore and Italy which have introduced legislations to provide regulatory clarity on the technological aspects of blockchain, such as smart contracts. We urge the Government of India to consider the same.

India's efforts towards blockchain have increased in the past year, as is observed through the introduction of blockchain policies on a state level and creation of regulatory sandbox by certain states in India. However, in today's informational age, we believe that a more comprehensive effort towards formulating regulation is required in order to decentralize the functions of India's economy. India's current climate towards cryptocurrencies has also led to dampen the blockchain ecosystem, and while the Lok Sabha bulletin describes the Government's intention to "*promote the underlying technology of cryptocurrency and its uses*", there is a need for greater regulatory understanding of blockchain within different arms of the Government. In an effort to seek clarity and to further the structure of India's blockchain ecosystem, we are enclosing our recommendations herewith.

Sincerely,
Shivani Agarwal and Samaksh Khanna,
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1. Background

The Government of India Ministry of Electronics and Information Technology (MeitY) published the National Strategy on Blockchain in January 2021 ("**Strategy**"). The Strategy sets out potentiality of blockchain by identifying certain sectors that could be benefitted from it. The Strategy further briefly discusses or recognises global efforts undertaken by China, Estonia, United Arab Emirates, Brazil, Chile and Canada and also initiatives of corporates like Amazon, Microsoft, IBM etc. It has been further specified that blockchain would add a business value of USD 3.1 trillion by 2030.

Blockchain technology has been piloted at Shamshabad District, Telangana State for property registration. Further the Strategy also describes the initiatives taken by the National Informatics Centre, Centre for Development of Advanced Computing, Reserve Bank of India ("**RBI**") etc.

The Strategy further stipulates technological and legal challenges in implementation and adoption of blockchain technology. Technological challenges include performance and scalability, skillset and awareness and security private and regulation challenges, while legal challenges include restriction on virtual currency by the RBI (the impugned circular has been struck down by the Supreme Court), non-repudiation through in person verification, lack of privacy framework, localisation requirements etc. According to the roadmap under the Strategy, currently the efforts are being made to identify, evaluate and evolve a prototype for specific applications and also deploying pilots for specific application is ongoing and the future will require scale deployments and adopting other domains, emerging shared infrastructure and cross domain applications.

The Strategy has finally suggested building an infrastructure that is spread across different zones and creating multiple platforms on such public infrastructure for different applications. Different applications, which will be hosted on the public infrastructure shall also be integrated with the existing national services like eSign, ePramaan, DigitLocker etc.

2. Mitigation, Solutions and Recommendation to the Legal Challenges

2.1. Ban by the RBI

The Strategy stipulates that one of the legal challenges in adoption of blockchain technology in India is the restriction put forth by the RBI on virtual currencies based on blockchain and further that the activities revolving tokenisation remain ambiguous. It is pertinent to note that the ban by the RBI vide its circular dated April 6, 2018[1] ("**Circular**") was applicable on financial institutions from providing any services to the virtual currencies platform and did not extend to the operation of virtual currencies itself. Furthermore, the Circular was set aside by the Supreme Court in the matter of *Internet & Mobile Association of India (IMAI)* v.

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[1] Prohibition on dealing in Virtual Currencies (VCs). Available at:
https://rbidocs.rbi.org.in/rdocs/Notification/PDFs/NOTI15465B741A10B0E45E896C62A9C83AB938F.PDF

the RBI², citing violation of Article 19 of the Constitution of India. Therefore the said Circular has been not in force since March, 2020. It is imperative to note that though blockchain emanated from introduction of virtual currency- bitcoin, blockchain is capable of functioning without the usage of its virtual currency. Certainly usage of certain blockchain ecosystem necessarily requires exchange in its native virtual currency- for example Ethereum which requires usage of ether for transactions taking place on Ethereum ecosystem. In relation to regulating tokenisation, the report of the Steering Committee on Fintech Related Issues issued by the Department of Economic Affairs³ ("**Steering Committee Report**") recognised initial coin offering ("**ICO**") and stated ICOs to be an innovative way of fund raising. As of September 25, 2018, the total amount raised through ICO stood at USD 20 billion.[4] Further, for the purpose of its regulation, depending upon the token's characteristics and purposes, they could be divided into (a) utility tokens; and (b) security tokens. While a utility token allows access to the issuer's product and services, a test for security token has been suggested in the matter of Securities *and Exchange Commission v. W. J. Howey Co [5]*, by the United States Supreme Court.

2.2.   Non-Repudiation for Banking Transactions

Another legal challenge as per the Strategy is satisfaction of non-repudiation requirements through in person verification as required under the banking regulations. Non repudiation is an essentiality specially in terms of increasing digital transactions. In the past, the RBI has satisfied itself on the aspect of non-repudiation through usage of public key infrastructure ("**PKI**").[6] Blockchain can be used to create a more robust PKI system. In the existing PKI system, certifying authority ("**CA**") serves as an intermediary for identifying and authenticating the transmitter and receiver. The Information Technology Act, 2000 ("**IT Act**") currently regulates the CA through establishment of the Controller of Certifying Authority ("**CCA**"). Although the CAs are regulated, it has been argued that the CAs may at times be corruptible single points of failure[7], as would any centralised system.

Blockchain offers a decentralised solution to the PKI ecosystem, wherein the process of identification, issuance and verification becomes more secure, transparent and tamperproof. Decentralised PKI ("**DPKI**") as a concept has been suggested in researches to eliminate single third party that can compromise the integrity and security of the system as a

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[2]Internet & Mobile Association of India (IMAI) v. the RBI., Writ Petition (Civil) No.528 of 2018

[3] Report of the Steering Committee on Fintech Related Issues, Department of Economic Affairs, Ministry of Finance, Government of India (2019), Available at https://dea.gov.in/sites/default/files/Report%20of%20the%20Steering%20Committee%20on%20Fintech_1.pdf

[4] *ibid*

[5] Securities and Exchange Commission v. W. J. Howey Co., 90 L. Ed. 1244; 1946 U.S. LEXIS 3159; 163 A.L.R. 1043

[6] https://m.rbi.org.in/scripts/PublicationReportDetails.aspx?UrlPage=&ID=759

[7] Christopher Allen, Arthur Brock, Vitalik Buterin, Jon Callas, Duke Dorje, Christian Lundkvist, Pavel Kravchenko, Jude Nelson, Drummond Reed, Markus Sabadello, Greg Slepak, Noah Thorp, and Harlan T Wood, Decentralized Public Key Infrastructure, A White Paper from Rebooting the Web of Trust (December 23, 2015), access at https://danubetech.com/download/dpki.pdf

whole.[8] Blockchain allows the data stored on it be readable around the globe and therefore minimising the vulnerability to any cyber-attacks.

2.3. Digital Signatures

Thirdly, the Strategy states that the IT Act currently does not recognise the digitally signed transactions involving immovable properties, wills, negotiable instruments etc. First Schedule of the IT Act specifies a select number of documents or transactions to which the IT Act shall not apply i.e. negotiable instruments, power of attorney, trust, will or any contract for sale or conveyance of immovable property. The Steering Committee Report had suggested that the Department of Legal Affairs review the processes and permit digital alternatives to documents specified in the first schedule of the IT Act which is compatible with electronic service delivery by financial service providers. Therefore, DPKI could still be deployed in relation to performance and execution of other documents and in the meanwhile, the Government must review the first schedule of the IT Act. This could lead to reduced cost and time saving for execution of documents and performance of certain services.

Moreover, we also recommend that the Government provides a legal framework and ascertain the legality of smart contracts. We understand that there is no specific exclusion of smart contracts to be governed under Indian law, specifically, the Indian Evidence Act, and the Indian Contract Act, 1872, however, the Government should regard the efforts made by certain jurisdictions such as Italy which has introduced legislations specifically iterating smart contracts and decentralised ledger technology (DLT). [9] Italy's law, Law No. 12/2019, converting Law Decree No. 135/2018, also known as the as *Decreto Semplificazioni*, prescribes a definition of DLT and smart contracts. The definition of DLT reads as "technologies and information protocols that use a shared, distributed, replicable, simultaneously accessible, architecturally decentralized registry on a cryptographic basis, such as to allow registration, validation, updating and archiving of data, both in clear and further protected by cryptography, that are verifiable by each participant, are not alterable and not modifiable*"[10]*. Further the definition of 'smart contracts' reads as "computer programs that operate on distributed registers-based technologies and whose execution automatically binds two or more parties according to the effects predefined by said parties*"[11]*.

Italy's law further sets out the legal effects of specific technological encumbrances which relate to blockchain such as time stamps. Such legal basis for associated functions to blockchain would provide for clarity in regulation and also facilitate potential application.

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[8] *ibid*
[9] Law No. 12/2019 which converts decree called as Decreto Semplificazioni, Legislative Decree No. 135/2018, into law. Available at: https://www.gazzettaufficiale.it/eli/id/2019/02/12/19G00017/sg
[10] Article 8-ter of Law Decree No 135/2018
[11] Article 8-ter(2) of Law Decree No 135/2018

2.4. Right to be Forgotten

The Strategy further shows a concern on immutability feature of blockchain which may not allow people to exercise right to be forgotten and that Section 43A of the IT Act is not sufficient to enable privacy vis-à-vis blockchain. The bitcoin blockchain provides for a cryptographic protocol where the data is stored in the form of a hash, thereby hiding the information from people who must not have access to such data. Implementing right to be forgotten is a big challenge for a blockchain ecosystem since the whole reason for its popularity is its immutability feature. In order to comply with right to be forgotten, it has been suggested to anonymise data by mixing. Mixing is the process of exchange of shuffling of users' coins with other users' coins so that to the observers it seems obfuscated.[12] Another suggestion has been to include personal data on central servers and not on blockchain. Blockchain can contain metadata of the personal information and traceability can be achieved with the help of a mapping function (hosted outside blockchain). Therefore the right to be forgotten is achieved by removing the link between the metadata on blockchain and private information in the central servers from the mapping function. This has already been implemented by MyHealthMyData.[13] Another approach to comply with the right to be forgotten, as implemented by BCDiploma is to destroy the secret key.

Destroying the secret key would make deciphering the message extremely difficult. However, it has been argued that the correct secret key could be relocated through trial and error method.[14]

2.5. Data Localisation

Lastly, another legal challenge as per the Strategy is data localisation. The Personal Data Protection Bill, 2019 requires the critical data to be stored in India. It is therefore recommended to adopt the blockchain ecosystem implemented by MyHealthMyData, as described above.

3. Creation of a Blockchain Working Group

The Government of India has not defined the true potential of blockchain in India's regulatory or governance regime. While outlays such as health, finance, insurance, data storage, supply chain has been included, the potential of blockchain has gone further in recent years. In this regard, we recommend that the Government considers the creation of a 'Blockchain Working Group' which will oversee the facilitation of the use of blockchain in

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[12] Rui Zhang and Rui Xue, Security and Privacy on Blockchain, ACM Computing Surveys, Vol. 1, (January 2019). Access at https://arxiv.org/pdf/1903.07602.pdf

[13] Aurelie Bayle, Mirko Koscina, David Manset and Octavio Perez-Kempner, When Blockchain Meets the Right to be Forgotten: Technology Versus Law in the Healthcare Industry, access at http://www.myhealthmydata.eu/wp-content/uploads/2019/10/When_Blockchain_Meets_the_Right_to_be_Forgotten.pdf

[14] *ibid*

different industries and also studying new applications of blockchain technology. In this regard, an important precedent can be taken from the United States' Blockchain Promotion Act, 2019[15], which prescribed the establishment of a Blockchain Working Group. The said group may facilitate interactions between academicians, industry experts, non-profit organisations service providers, with the Government of India and various State Governments. The setting up of such a group will ensure the representation of all stakeholders and the realisation of potential applications of the technology. Moreover, it will also provide various agencies within the government to engage in activities relating to blockchain.

4. Missed Opportunities

While the Strategy lays out a vague plan to implement blockchain on a zonal level, it does not elaborate any process to implement the same. Further, the Strategy indicates plausible use cases, however, none of them have been discussed at length. The Strategy fails to consider the recent development e.g. the RBI's plans to explore viability of central bank digital currency (CBDC), the Supreme Court ruling in the matter of *IMAI v. RBI* etc. The Strategy only considers the already evolved sectors with regard to the application of blockchain. It is submitted that the Government should hold more stakeholder discussions to analyse the potential use cases of blockchain such as in the telecommunications industry where blockchain can be utilised to automatically trigger charges based on roaming and save cost by eliminating third party clearing house services.

Moreover, the Strategy does not envisage upon any innovative solutions that may rendered through the application of blockchain. Jurisdictions such as Singapore have utilised blockchain for trade transactions and as an international settlements platform. The Monetary Authority of Singapore, through Project Ubin, has completed Phase 5 testing its blockchain based payments network. [16] . On Phase 5 of testing, Project Ubin successfully completed the settlement of payment of different international currencies on the same network. This would enhance the conventional payments channel to enable ease of settlement process in less time. A similar approach can be followed by the RBI to test international payments mechanism on the blockchain.

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[15] Bill H.R. 1361 in the 1st Session of the 116th CONGRESS. Available at: https://www.congress.gov/bill/116th-congress/house-bill/1361/text

[16] Singapore's new blockchain based international settlements platform. Available at: https://www.blocksuits.com/post/singapore-s-new-blockchain-based-international-settlements-platform

5. Conclusion

As per the Strategy, MeitY still considers a legal prohibition on virtual currencies; however, this is not the case since the Supreme Court of India has struck down the RBI circular, deeming it unconstitutional in nature. Moreover, the Steering Committee Report recognises the scope of ICOs as an innovative method of fund raising. Global jurisdictions such as the UAE and the United States have introduced comprehensive guidelines for the same, and recommend the Government of India to introduce similar guidelines for tokenisation of assets on the blockchain. Non-repudiation requirements should not be considered as an impediment towards adoption of blockchain as blockchain allows for the creation of a more robust PKI system, within terms specified by the RBI. While certain documents such as wills and negotiable instruments have been exempted from digital signatures under the IT Act, it is recommended, and envisaged by the Steering Committee Report, that the Department of Legal Affairs should consider amending the IT Act, to include such documents for digital signatures.

Further, the Government should also consider introducing a legal framework for technological applications of blockchain such as smart contracts. Such legislations have been introduced in globally, for example in Italy, and will provide the much needed clarity in regard to blockchain functions. It is noted that the Strategy considers blockchain technology contradictory to the right to be forgotten, however, this is not the case. Various enterprises have developed solutions which have complied with the right to be forgotten under various laws such as the General Data Protection Regulation (GDPR) in the European Union. Such compliance can be achieved through delinking mechanism as we have discussed under Section 2.4. Similarly, it shall be noted that under the forthcoming Personal Data Protection Bill, 2019 (which is currently under parliamentary discussions) provides for data localisation requirements for 'critical data'. Various enterprises, such as MyHealthMyData, have created a compliant framework for blockchain in line with such data localisation requirements. Moreover, jurisdictions such as the United States have, through legislative instruments, provided for a creation of a Blockchain Working Group. It is our recommendation that the Government of India proposes a similar working group or council which will assist in recognising the potential applications of blockchain.

We also submit that the use of blockchain technology by governments globally is already in a much advanced stage. The Government of UAE aims to aims to transform 50% (fifty-per cent) of government transactions into blockchain platform by 2021. [17] In this regard, India should also consider more innovative solutions and applications of blockchain such as international settlements of trade transactions.

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[17] Emirates Blockchain Strategy 2021. Available at: https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/federal-governments-strategies-and-plans/emirates-blockchain-strategy-2021#:~:text=The%20strategy%20aims%20to%20capitalise,the%20blockchain%20platform%20by%202021.&text=By%20adopting%20this%20technology%2C%20the,398%20million%20printed%20documents%20annually