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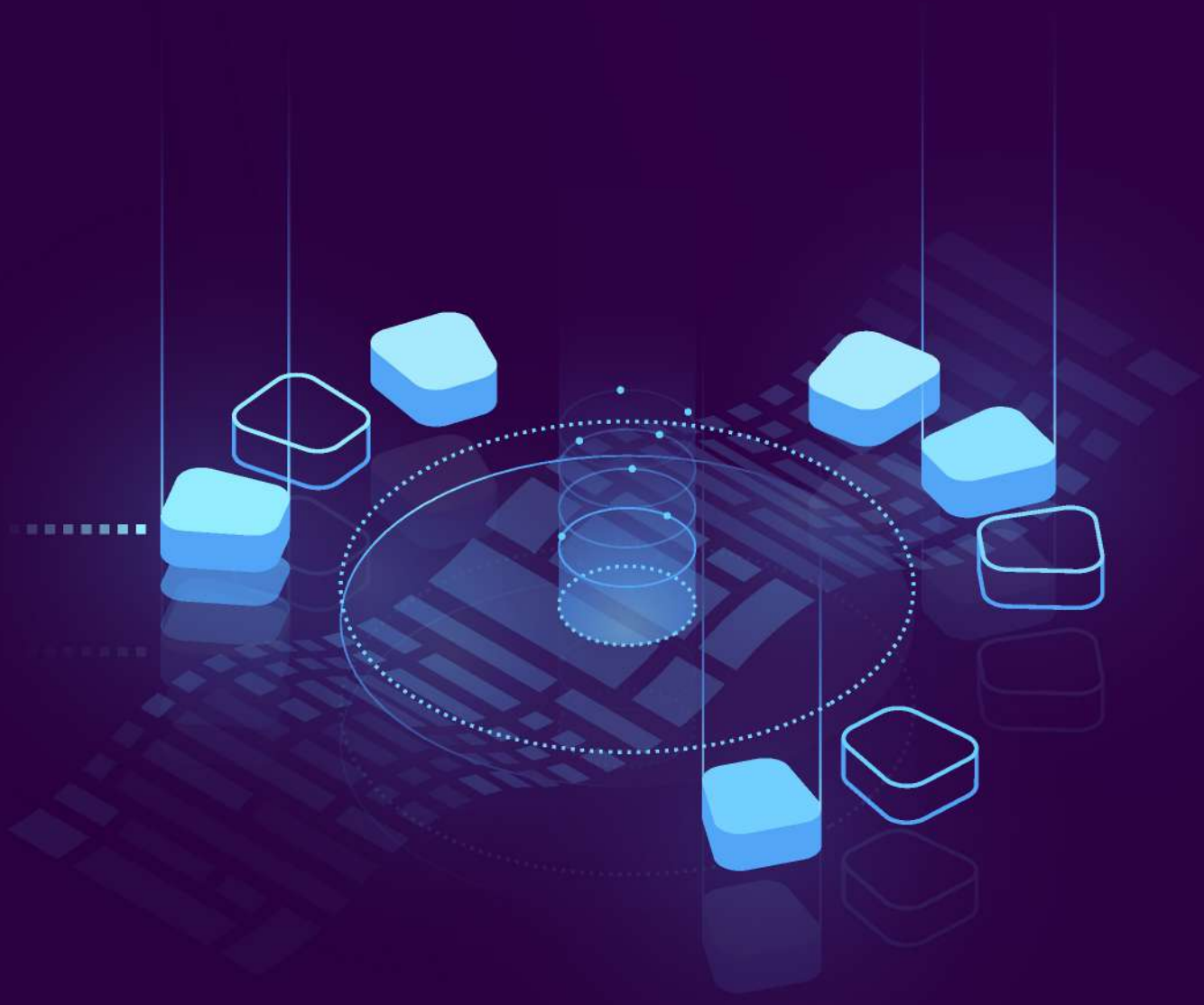
INPUTS BY THE CYBERPEACE FOUNDATION ON THE NATIONAL STRATEGY ON BLOCKCHAIN BY THE MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY



Authored by Antara Vats[1] with research inputs from Dr Irfan Siddavatam[2] Dr Faruk Kazi[3] and Ritesh Mishra[4]

Designed by Kumar Vikram[5] and Pallav Jha[6]

1. Antara Vats is the Research Analyst at The CyberPeace Foundation
2. Dr Irfan A Siddavatam is the Head, Department of Information technology at K J Somaiya College of Engineering, Somaiya Vidyavihar University (SVU) Mumbai.
3. Dr Faruk Kazi is a Professor in the Electrical Engineering Department & Dean of Research at Veermata Jijabai Technological Institute, Mumbai.
4. Ritesh Mishra is the manager Information Security at The CyberPeace Foundation.
5. Kumar Vikram is the Manager - Projects & Designs at The CyberPeace Foundation.
6. Pallav Jha is the Assistant Creative Artist at The CyberPeace Foundation.

ABOUT CYBERPEACE FOUNDATION

CPF is an award-winning nonpartisan civil society organization, think tank of cybersecurity and policy experts. At CPF, we work with netizens and institutions to facilitate inclusivity, security, stability and trust in cyberspace and our vision is to build a peaceful, responsible and inclusive cyberspace. To achieve our mission, we are involved in Inclusion & Outreach, Collaboration & Connect, Policy & Advocacy and Innovation & Outreach related to all aspects of Cyber Peace and Cyber Security. Our focus areas are research on technology governance, citizens awareness - women & children, capacity and capability creation of law enforcement agencies (LEAs) through partnerships with various citizens, cybersecurity experts, government organizations, private enterprises, academic institutions and civil society entities working in cyber-crime and cybersecurity. This submission presents CPF's feedback along with policy recommendations that we feel would expedite the implementation process of the National Strategy on Blockchain.

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INPUTS

The CyberPeace Foundation (CPF) is grateful to the Ministry of Electronics and Information Technology, Government of India for providing the opportunity to all stakeholders to contribute to the discussion on the National strategy on Blockchain 2021 (hereinafter referred to as MeitY document). Technological developments have guided the development of economies and nation-states over centuries. As pointed out in the MeitY document, blockchain technology provides a unique opportunity for India to further the discourse on "minimum government, maximum governance" for all stakeholders including citizens, government and businesses in banking, finance, cybersecurity, management of land records and so on. This submission presents CPF's feedback along with policy recommendations that we feel would expedite the implementation process.

1. In Blockchain: The India Strategy[7](hereinafter referred to as NITI Aayog document) released in January 2020 by NITI Aayog, one of the key recommendations was to build IndiaChain. It would be a national infrastructure built for the deployment of blockchain solutions just like the Unified Payments Interface with inbuilt identity and incentive platform. The National Strategy on Blockchain[8] by MeitY released in 2021 states the need for building indigenous technology stack with an open Application Programming Interface (API). This would assist in integrating various use cases developed to address nation's requirements with existing applications. Like the previous document, it also focuses on the creation of national infrastructure and offering Blockchain as a Service (BaaS). It is recommended that existing data centres be used for the facilitation of BasS. The purpose of Blockchain API is to offer a common interface for communication among various clients and service providers. Generally, the Blockchain API functionality is summarized as an interface to enable service to users in response to cryptocurrencies paid by users. There remain broader concerns regarding the implementation of the framework outlined in the two strategy documents, the stakeholders involved in the process, the scope of the project, interoperability standards that need to be maintained, and challenges associated with BaaS.

   Along with this, concerns regarding the nodal agency for implementation, and the involvement of public and private players such as academic institutes, foreign investors, government bodies like National Institute for Smart Government, National Informatics Commission and so on. The framework has suggested that while the infrastructure would be government-led, it is being envisioned as a platform for private developers to build applications. It is important to provide incentives to different stakeholders involved to enhance the implementation and growth of the blockchain technology as suggested in the MeitY document as well as the Draft Approach Paper - National Strategy for Blockchain by National Institute for Smart Government[9](hereinafter referred to as NISG document). Our **recommendation** is to establish a clear set of incentives for distinct stakeholders with divergent interests like private start-ups working on developing Blockchain platforms, academic institutions for upskilling and reskilling labour force while being mindful of international organisations who might use private-public partnerships to circumvent compliance measures to access consumer's data[10]and so on.

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7. NITI Aayog. (2020) Blockchain: The India Strategy. https://niti.gov.in/sites/default/files/2020-01/Blockchain_The_India_Strategy_Part_I.pdf
8. Ministry of Electronics and Information Technology. (2021) The National Strategy on Blockchain. https://www.meity.gov.in/writereaddata/files/NationalStrategy-BCT_%20Jan2021_final.pdf
9. Shivendu. (2019). Draft Approach Paper - National Strategy for Blockchain. National Institute for Smart Government.https://4c44db83-35be-491f-a87f-fc7c6a312fd0.filesusr.com/ugd/cc85ab_6dd677ce70124618b88c70be071f3eac.pdf
10. For instance, TransUnion had acquired 92% shared in Credit Information Bureau India Limited and even Facebook's investment in Reliance Jio. This approach is increasingly being adopted by international entities to circumvent the compliance requirements for using the data of the data principals.

Also, the question remains if Blockchain service would be adopted by all sectors or each sector will develop different applications that will operate together like IndiaStack. The latter case would be more conducive considering different sectors expose different issues with use cases. By breaking down the layers, we would have more clarity on the nature of data, security and privacy risks that need to be addressed with each sector.

Our recommendation would be to keep the layer of metadata under the public framework and actual specific data along with the transfer details of it should be maintained under separate layers. The transactional data should be maintained with Blockchain technology and the APIs can assist in maintaining broader datasets. As also mentioned in the NISG document, the regulations and laws should not be on the technology as a whole to not stifle innovation but on particular use cases. Our recommendation is to build on that and we should instead have sector-specific regulations outlining the different stakeholders involved in developing, deploying and maintaining the technology along with procedural details. It can not be confirmed at such an early stage if the four architectures to be set, namely, public and permissionless, public but with permissions, private and permissionless, and private and with permissions would deal with privacy concerns raised by the traditional understanding of blockchain. Our recommendation is to also define the key stakeholders involved in the process and delineate their responsibilities. This would ensure that for each sector, we have privacy and security criterions outlined. We also should start small while implementing the technology by identifying a sector and the use case within and then scale it up.

2. The framework would be used to identify the use cases to start developing and deploying Blockchain use cases are mentioned in the NITI Aayog document such as listing applications of Blockchain in the national interest, e-governance, and domains where Blockchain can be effective. Though the framework has broadly addressed how Blockchain technologies will strengthen related use cases, the suitability of use cases for Blockchain adoption and adaption along with difficulties in migrating the use cases and how can the process be made more feasible for specific use cases is not covered in the document. Our recommendation would be to cover the following points in the MeitY document :

a) The document should mention the requirements and gaps in the available computational infrastructure required to implement Blockchain and define a roadmap for India to reduce the gap.

(b). We need to confirm the criteria to check when the developed Blockchain application could be facilitated through Blockchain as a Service.

(c). The document should also clearly outline the standards that need to be attained with the use cases. The acceptable coding practices and API handling need to be clearly outlined.

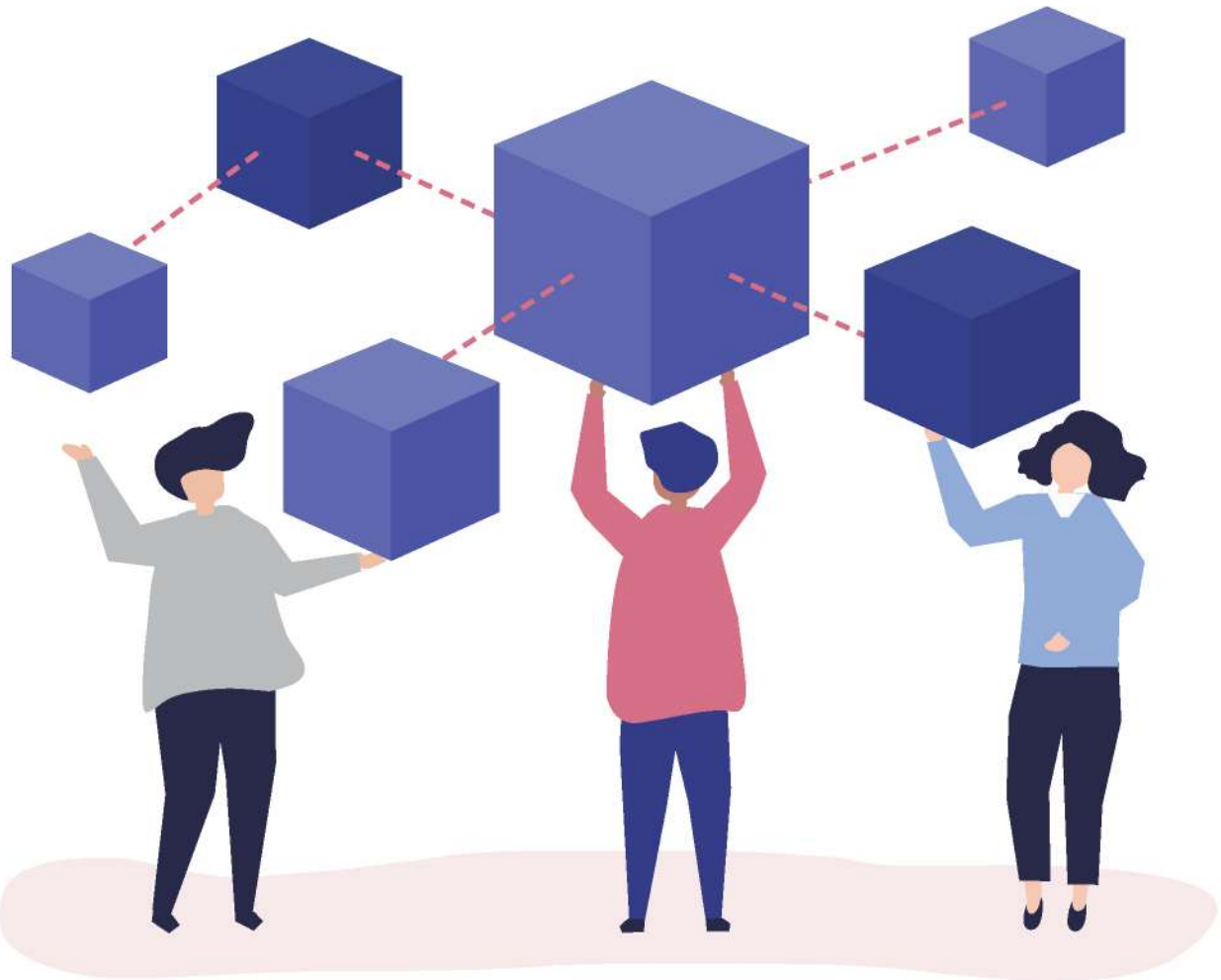
3. The MeitY document suggests bringing accountability and transparency through the adoption of blockchain technology. Digitisation of all documents will have to precede the blockchain revolution as the blockchain technology can not guarantee data veracity (Shivendu 2019) but the implementation of digitisation has been uneven all over India especially in terms of land records under the Digital India Land Records Modernization Program.[11] As also pointed out in the NITI Aayog document in fertiliser subsidy case study, the record systems were filled with inefficiencies as they were multiple records, low trust in the data management and limited visibility for inventory stocks. Since it is a distributed ledger, it is imperative to ensure that the data put in the system is not under dispute especially in terms of land records. Our recommendation is defining standards for the collection, storage and maintenance of data. For the successful implementation of any technology, the human factor plays an important role. The skill development not only in the role of the developer but also in other associated stakeholder roles will be a major challenge in the development of indigenous Blockchain solutions. The data collected should be clearly defined along with the purposes for all stakeholders including the citizens to build trust within the system. Our recommendation is to explain the long term risks of security, privacy and interoperability and benefits of digitisation to people to increase digital literacy. It is important to note the difference between digital awareness and competencies required by a citizen to carry out Blockchain-enabled transactions and there is a need to work on both. The process should also be supported with a holistic implementation plan to ensure that all records are available in one place and regular audits can be conducted to ensure its safety every one to two years.

Our recommendation would be to identify the underlining approach towards the adoption to identify the depth of its impact and develop standards accordingly - is the approach to ensure decentralization of records or is it the usage of technology for certain use cases like smart contracts to ensure accessible, consistent and transparent records. Both approaches are different and will have different deployment strategies that will be adopted along with the risks.

11. Digital India Land Records Modernisation Program. https://dilrmp.gov.in/faces/rptstatephyfinstatus/rptphyfinstatus.xhtml

4. The Indian government is planning to ban Bitcoin and launch its digital currency. Cryptocurrencies like Bitcoin have established themselves and mushroomed over a couple of years. While the decision to launch India's digital currency is commendable, our recommendation would be to adopt an open approach towards cryptocurrencies including Bitcoin. This would assist us in becoming an active part of the global cryptocurrency market while recognising and identifying the risks for the citizens ourselves. This would also assist us in developing viable guidelines and a digital currency with limited risks. We are concerned as banning all cryptocurrencies might lead to a rise in illegal and undercurrent activities[12] and that might become an impediment to India's growth.

Non-repudiation requirements through in-person verification is still an issue in India especially for the verification of transactions using cryptocurrencies. Digilockers and e-sign would be able to assist in the verification but our recommendation is to establish guidelines outline the structure of certification and accountability for them first.



12. Banerjee P. (2019). Banning cryptocurrency in India not a solution: Nasscom. Mint. https://www.livemint.com/news/india/banning-cryptocurrency-in-india-not-a-solution-nasscom-1564476081539.html

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