



IET Future Tech Panel Healthcare
Working Group responds to

The Draft of National Strategy on
Blockchain

The Institution of Engineering and Technology

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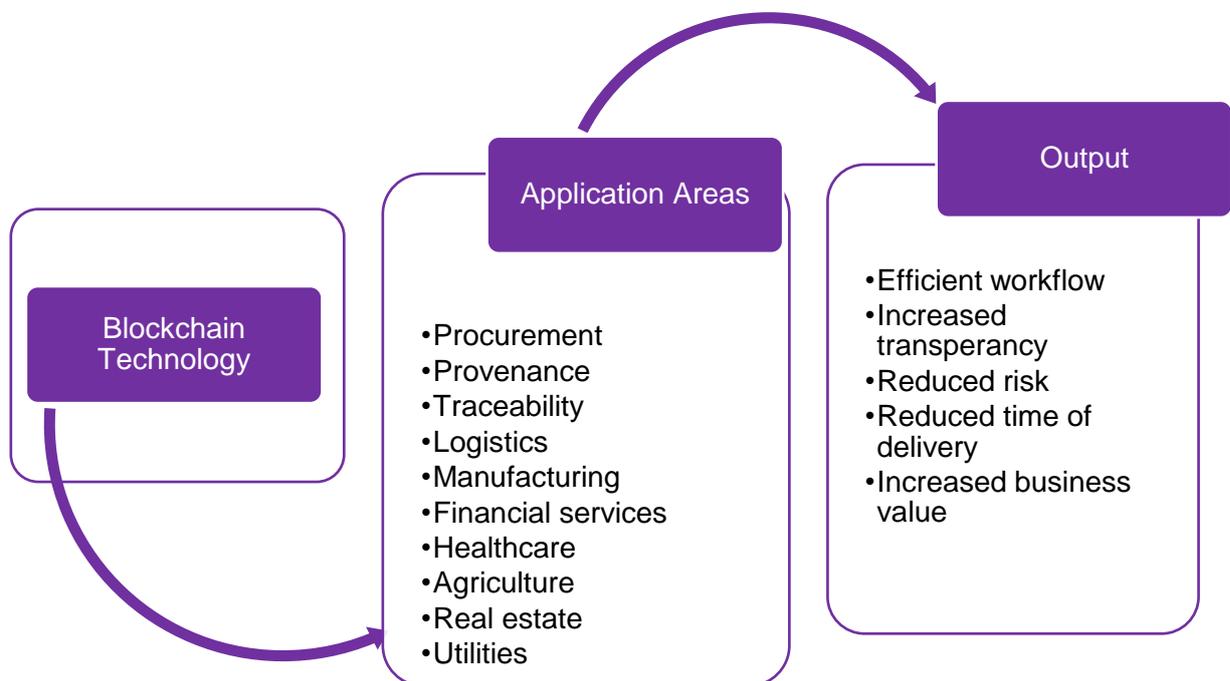
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Draft National Strategy on Blockchain by Ministry of Electronics and Information Technology (MeitY), Government of India

Response from IET Future Tech Panel- Healthcare Working Group

Blockchain technology is the key to building a digital economy that is transparent and accountable. Its applications across sectors such as healthcare, financial services, agriculture, real estate, utilities, manufacturing and supply chain, are critical to the country. Operational simplification and automated compliance in financial services, data integrity, traceability and operational efficiencies in healthcare, low cost inventory management and procurement in manufacturing and supply chain, are few amongst the numerous areas where blockchain can play a revolutionary role. Blockchain is also one of the fastest growing skill set demanded on job sites. Missing out on blockchain as a technology can affect India's overall technology competitiveness.

Growing importance on the adoption of future technologies and its applications are plugging into India's blockchain revolution. With this, induced economic impacts leading to growth and efficiencies across sectors can be expected.



At the outset, the IET would like to thank the Ministry of Electronics and Information Technology (MeitY) for its continuing efforts in improving and enhancing the adoption of future technologies across the country. The recommendations in this document are a response to the call issued by MeitY for their draft on the National Blockchain Strategy published on February 1, 2021. This document lays out the opinions of the Healthcare Working Group of the IET Future Tech Panel. Since the call is to seek inputs on strategies for metamorphosing the Indian blockchain ecosystem, it is only befitting that the interdisciplinary, neutral panel that we lead, reviews it from all standpoints and presents a comprehensive feedback.

IET Future Tech panel responses

Blockchain adoption in India for healthcare: Issues and Recommendations

Healthcare transformation is in full swing in India. While Covid-19 gave a boost to the much needed changes in regulations around telemedicine, it has also resulted in changing business and research cycles as is evident from the release of Covid-19 vaccines in India in less than 2 years of the first case.

The recent release of standards on blockchain is a welcome move in the same direction. Healthcare can immensely benefit from the inherent features in blockchain such as:

- 1) Encryption
- 2) Immutability
- 3) Crypto Currency
- 4) Distributed Ledger
- 5) Settlements
- 6) Security
- 7) Decentralization
- 8) Smart Contracts for Health Insurance

While these benefits are there across the industry, the key challenges that we can expect to emerge in healthcare with the advent of digital transformation, are as follows:

- 1) Healthcare Data Costs- While we have all celebrated digital data, especially with the advent of telemedicine and health information systems, it will also lead to huge data costs that will get passed on to consumers. The US for example spends billions on data costs
- 2) Spurious Drugs- It is estimated that almost 25% of the drugs in India are spurious and this mostly happens due to insecure supply chains. The issue is much larger in certain parts of the country and that leads to a huge impact on the health of patients

- 3) Data and Cyber Security – Increasingly, healthcare organisations are coming under stack from very sophisticated hackers. Data breaches have resulted in many public health records being put up on the dark web as well as on public domains
- 4) Post-Operative Care- One of the areas of concerns in healthcare remains the adherence of the patient to the post-operative care instructions. While the physician can give instructions, the adherence to them remains a big challenge
- 5) Health Insurance Contracts- Health insurance is at its ascendancy in India and we see instances of increased coverage. Health insurance contracts are the key to providing care and making sure that the provisions of such contracts have been met
- 6) Clinical Trials – Blockchain can help accelerate the research and speed to market clinical drugs and vaccines

Key challenges for adoption of blockchain in healthcare

- 1) Business and Clinical Case – While there are many advantages of blockchain, it is very difficult for healthcare organisations to make the right business case to adopt a foundational technology like blockchain
- 2) Technology Foundation- Blockchain is a foundational technology. It is like Transmission Control Protocol/Internet Protocol (TCP/IP) as a protocol for transmission of digital data. It is very essential that there are incentives given to adopting something like this for healthcare organisations
- 3) Clarity on Crypto Currency- The recent investment from Tesla notwithstanding, there is little clarity on the way forward in India on crypto currency
- 4) Regulation- The various healthcare acts in India are still silent on blockchain. While the IT Act is being replaced by the DISHA and Draft Data Privacy Bill, as of now both are silent on blockchain. Also, it is unclear whether bodies like the Institute of Chartered Accountants of India (ICAI) are talking to its members on how to audit and review reports from the blockchain
- 5) Access Controls- Blockchain has no access control systems and any attempt to build a private blockchain would require an access control system to be set up
- 6) Protection of Keys- Despite all the encryption, use of blockchain would come to secure keys without which there would be an issue in handling the private and public keys
- 7) Coding Standards – When it comes to smart contracts, coding standards is the key. There needs to be a mechanism for reviewing smart contracts algorithm; as in the past, this has led to issues like the ones faced by The Dao in Germany
- 8) Legality of Smart Contracts- Smart contracts are still not a legal instrument in India. While there are many benefits of smart contracts, their adoption will depend on their legal status in the country
- 9) Skills – There is a lack of relevant skills in the country for blockchain. We don't have the right skill sets in the educational institutions to create the right workforce for blockchain

Recommendations

- 1) Incentives for the adoption of blockchain- Help healthcare organisations could adopt blockchain with incentives in the form of tax breaks and assistance with technical adoption
- 2) Standards for blockchain for healthcare- Clarity of the position in case of draft data privacy bill and DISHA
- 3) Clarity on crypto currency – Clarity on the position of crypto currency and its implications in healthcare
- 4) Legality of smart contracts- Clarity on smart contracts and how they can be implanted in healthcare
- 5) Industry Academia collaboration- Push academia to move into emerging areas like blockchain. Several engineering colleges are still teaching redundant technologies and not focusing on emerging ones
- 6) Recommendations to organisations like ICMR, CDSCO and the Ministry of Health and Family Welfare around adoption and implementation of future technologies such as blockchain
- 7) Guidance for audit and assurance on reports from blockchain to institutions like ICAI

We believe healthcare can immensely benefit from blockchain. The need of the hour is to provide necessary guidance and standards from policy, technology and process perspectives for implementation and development of blockchain.

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