

An India Blockchain Platform

Why in news?

A digital infrastructure based on blockchain technology has the potential to transform the digital ecosystem in India.

What efforts have been taken to promote digital revolution?

- India has made a significant effort to become a digital society by building a large citizen-scale digital public infrastructure.
- The Government of India and Reserve Bank of India (RBI) have been promoting simplification and transparency to increase the speed of interaction between individuals, markets, and the government.
- [The Digital India mission](#) (2015) has transformed our payments, provident fund, passports, driving licences, crossing tolls, and checking land records with modular applications built on Aadhaar, UPI, and the India Stack.
- JAM (Jan Dhan, Aadhaar and Mobile) aimed to combine bank accounts for the poor.

What are the limitations of public digital infrastructure?

- Digital infrastructure should be designed based on principles of availability, affordability, value, and trust.
- **No interconnection**- But in the current digital ecosystem, existing different digital infrastructures are not interconnected as a design.
- A technical integration is required to make them conversant and interoperable.
- **Relying on private databases**- Information has to travel across multiple systems to complete the interaction, and rely on private databases, which makes the validation of data more complex as the network grows.
- **High cost and inefficiency**- This in turn drive up the costs and create inefficiencies.

How can Web 3.0 address the challenges?

- **Web 3.0**- Web 3.0 is based on the concept of creating a totally decentralized ecosystem.
- It believes in leveraging the power of A.I., machine learning, and latest technologies like blockchain to solve the problems of the present-day internet/online ecosystem.
- Web3 is not only the cryptocurrencies, but also NFTs or non-fungible tokens, representing physical assets or digital twins.
- **Transparent and decentralized**- The Web 3.0 architecture establishes a new version of the Internet protocol incorporating token-based economics, transparency, and decentralisation.
- **Access ecosystem benefits**- A user can access all ecosystem benefits using a distributed token where they can show proof of ownership, tax history, and payment

instruments.

- **Simplified**- Since the Web 3.0 ecosystem is less zero-sum, key operations can be encoded in “smart contracts” that are auditable, immutable, and easier for an early adopter to complete.
- **No need for verification by a third party**- A blockchain-based infrastructure can provide all of these attributes without the need of trusting any particular actor to verify a ledger’s history.
- **Real time auditing**- The blockchain records could be visible, compiled, and audited by the regulators in real time.

How about the global adoption of blockchain infrastructure?

- **Estonia**- Estonia, the world’s blockchain capital, is using blockchain infrastructure to verify and process all e-governance services offered to the general public.
- **China**- China launched a program in 2020 called BSN (Blockchain-based Service Network) to deploy blockchain applications in the cloud at a streamlined rate.
- **Britain**- In Britain, the Centre for Digital Built Britain is running the National Digital Twin program (NDTp) to foster collaboration between owners and developers of digital twins in the built environment.
- **Brazil**- The Brazilian government launched the Brazilian Blockchain Network to bring participating institutions in governance and the technological system that facilitates blockchain adoption in solutions for the public good.
- **DeFi**- There are also well-established decentralised finance (DeFi) platforms that rely on blockchain infrastructure and are pegged to the base cryptocurrencies owned by that platform.
- DeFi allows users to borrow and lend cryptocurrencies on a short-term basis at algorithmically determined rates.
- **India**- Many Indian technology firms are building layer 2 chains (L2) on top of the base proven layer 1 chains (L1), while providing value-adds like scale, throughput, etc., mainly through bundling the transactions.

Recently, blockchain provider Solana launched a prototype smartphone with hardware and security that can support decentralised apps for people interested in crypto wallets, Web3, and NFTs.

What is the need of the hour?

- The Indian digital community, including fintechs, academia, think tanks, and institutions, should focus on supporting research in standards, interoperability, and efficient handling of current known issues with the distributed technologies
- The smartphone manufacturers will have to deliver blockchain compliant devices by adding extensions.
- A national platform operating at L1 that interconnects blockchains, application providers, token service providers and infrastructure managers can form a reliable and efficient network for the Indian digital economy.
- The ecosystem can deploy relevant and purpose-specific applications at L2 for very

little cost and effort, while the L1 continues to handle the heavy lifting for all the L2s operating on layer 1.

- The need of the hour is to work on an indigenous solution of the people - an India Blockchain Platform.

References

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