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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