



VISHVASYA-BLOCKCHAIN TECHNOLOGY STACK – SCIENCE & TECHNOLOGY

News: *The Ministry of Electronics and Information Technology (MeitY) launched the Vishvasya-Blockchain Technology Stack.*

What's in the news?

Blockchain Technology

- Blockchain is a shared, immutable ledger that records transactions and tracks assets across a business network.
- It stores information electronically in a digital format to ensure transaction security.
- It is known as Distributed Ledger Technology (DLT).
- It converts and stores anything of value, including currency, in a digital format.
- **Historical linkages** :It was first proposed in 1991 as a research project, but in the year 2009, Blockchain was used in bitcoin
 - Bitcoin is a cryptocurrency which is built on the basis of Block technology.
- **Structure and Security:** Consists of interconnected data blocks.
- Each block is linked to the previous one, forming a chain.
- Blocks are designed to be secure and resistant to tampering or hacking.



Applications

- **Finance and Banking: Financial institution** Testing blockchain for trade finance, foreign exchange, cross-border settlement, and securities.
 - India, with its large underbanked population, can leverage blockchain for financial inclusion.
 - Blockchain has been used in the creation of various cryptocurrencies, decentralized finance applications, non-fungible tokens and smart contracts.
- **Governance and Public Services:** Blockchain's potential to enhance transparency and accountability in governance is being actively explored. Applications include land record management, voting systems, and identity verification.



- **Healthcare:** In healthcare, blockchain can be used to securely manage patient records, ensure data integrity, and facilitate the secure sharing of medical information between institutions.
- **Transparent Elections:** Blockchain can enhance election processes by providing transparent and tamper-proof voting records.
- **Supply Chain Management:** Tracking goods from origin to destination becomes more reliable using blockchain.
 - India's vast supply chains can benefit from increased transparency and traceability.

Challenges and Criticisms:

- **Lack of Awareness :** Despite growing interest, blockchain technology is still at a nascent stage in India.
 - Many industries are yet to fully grasp its potential.
- **Misconceptions** persist, such as the belief that blockchain will replace existing systems entirely.
- **Scalability Concerns:** Scalability remains a significant challenge.
- **Regulatory Uncertainty:** Clear regulatory guidelines are essential for widespread adoption.
 - India is making progress, but further clarity is needed.
- **Cybercrime:** Increased crypto adoption has led to a rise in scams and cybercrime.
 - India's nascent regulations make it difficult for victims to recover losses and for authorities to address crypto-related crimes effectively.

Recent Steps

- **Vishvasya-Blockchain Technology Stack :** It offers Blockchain-as-a-Service with a geographically distributed infrastructure designed to support various permissioned Blockchain based applications.
- **National Blockchain Framework :** MeitY, with the vision to create trusted digital platforms, initiated National Blockchain Framework (NBF) for promoting research and application development; facilitating state of the art, transparent, secure and trusted digital service delivery to citizens.
- MeitY also unveiled the NBFLite-Lightweight Blockchain Platform, **Praamaanik** – an innovative blockchain-enabled solution for verifying mobile app origin and National Blockchain Portal.
- **Blockchain Sandbox for Startups and Academia:** NBFLite, a Blockchain sandbox platform, is developed especially for startups/academia for rapid prototyping of applications, carrying out research and capacity building.

Conclusion and Way Forward

- The Blockchain technology holds immense potential for transforming governance in India by making public services more transparent, efficient, and accountable.
 - It has the potential to create new industries and transform existing ones, such as facilitating nano-payments and wealth redistribution.
- As blockchain networks grow, ensuring efficient transaction processing becomes crucial.



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- The stakeholders should aim to position India as a global leader in blockchain technology and proliferate the developed solutions for Global adoption, leveraging it to drive economic growth, social development, and digital empowerment.

Source: https://www.business-standard.com/markets/capital-market-news/government-of-india-launches-vishvasya-blockchain-technology-stack-124090500813_1.html



**P.L. RAJ IAS & IPS ACADEMY | 1447/C, 3rd floor, 15th Main Road,
Anna Nagar West, Chennai-40. Ph.No.044-42323192, 9445032221
Email: plrajmemorial@gmail.com Website: www.plrajiasacademy.com
Telegram link: https://t.me/plrajias2006 YouTube: P L RAJ IAS & IPS ACADEMY**