Blockchain Metaverse is the Future

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WHAT IS BLOCKCHAIN ?

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Blockchain is an innovative distributed ledger technology which was first introduced in the design and development of cryptocurrency, Bitcoin in 2009 by Satoshi Nakamoto.

Blockchain is an amalgamation of various innovations, with a clear business value.

Blockchain enables a shared ledger among the various parties involved in business transactions, which acts as the single source of truth.

Blockchain eliminates the need for a central entity to validate the transactions.

VISION AND MISSION OF BLOCKCHAIN TECHNOLOGY

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VISION

To create trusted digital platforms through shared Blockchain infrastructure; promoting research and development, innovation, technology and application development; and facilitating state of the art, transparent, secure and trusted digital service delivery to citizens and businesses, thus making India a global leader in Blockchain Technology

MISSION

Endeavour to evolve a vigilant and trusted collaborative digital ecosystem to provide a consensus based, tamper-evident, transparent and open framework for offering eGovernance services to citizens and businesses involving multiple organizations in a participating environment assuring trust, security, track and trace, integrity and regulatory compliance.

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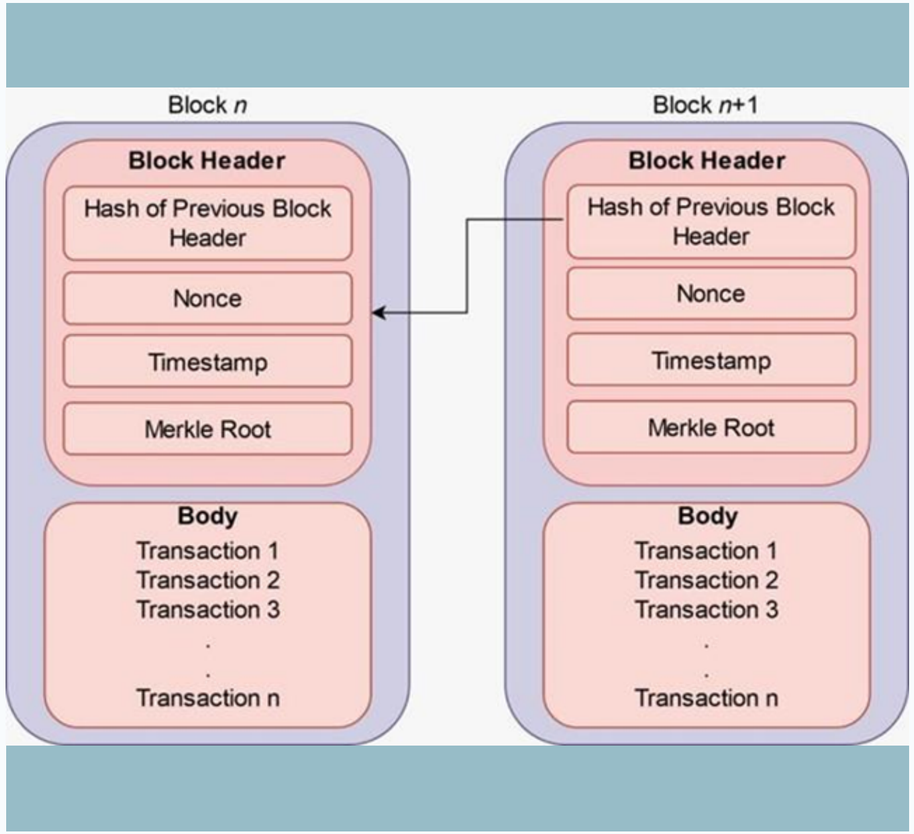
FUNCTIONING OF BLOCKCHAIN



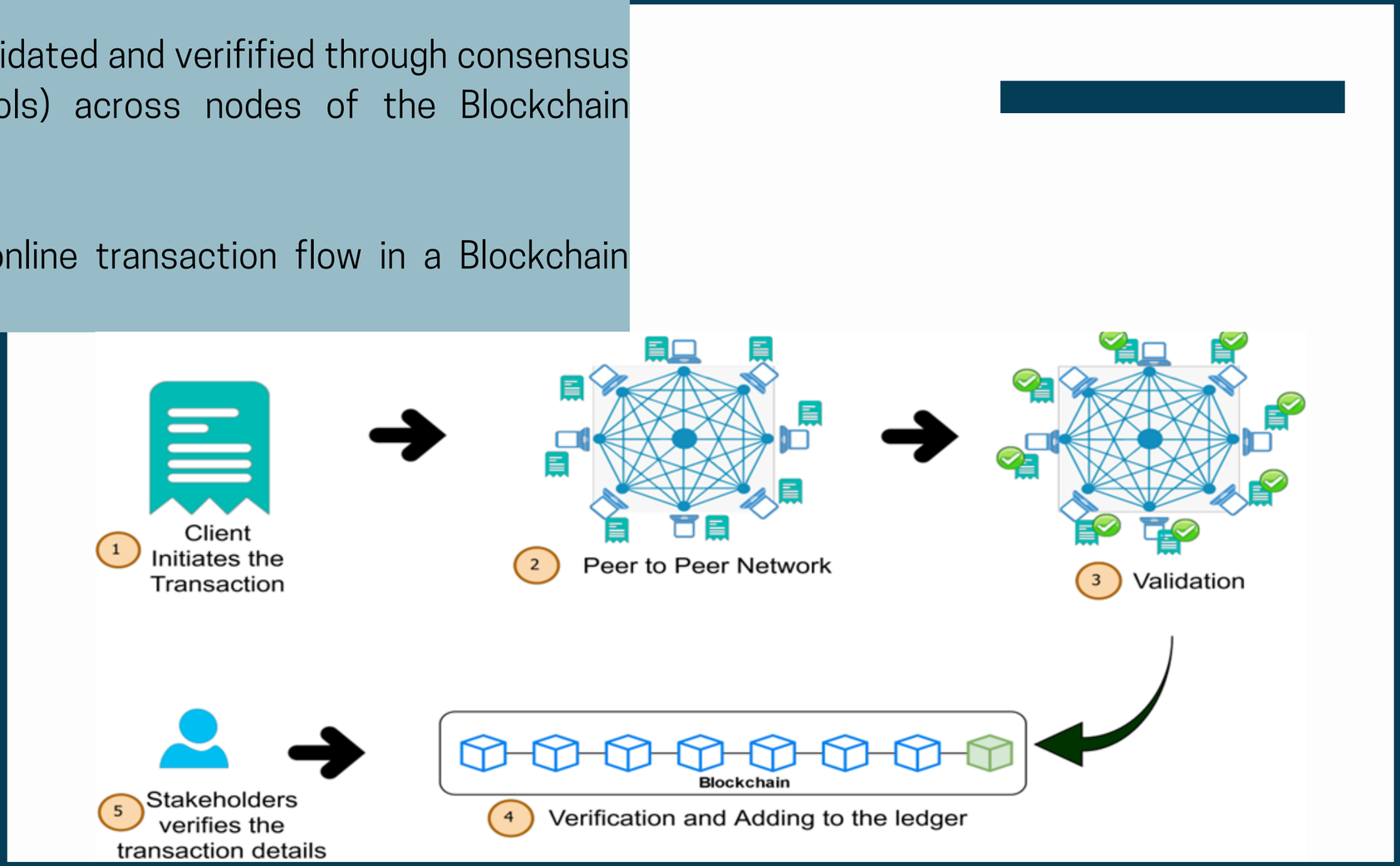
- Blockchain technology is an amalgamation of various technologies such as distributed systems, cryptography, etc..
- Data and transactions stored in blocks of Blockchain are secured against tampering using cryptographic hash algorithms.
- Blocks are linked with each other with proper security using hash function. This leads to a Blockchain, which is a distributed ledger stored at various nodes in the network.
- Each block contains details of transactions, hash of the previous block, timestamp etc., as shown in Figure.
- It is difficult for an adversary to modify the stored details at points. Therefore, Blockchain provides better security when compared with a centralized system.

Verification of Blockchain Transaction

Data and transactions executed over the network are stored in the ledger in a decentralized manner over peer-to-peer network.

Transactions are validated and verifiied through consensus (consensus protocols) across nodes of the Blockchain network.

Figure shows the online transaction flow in a Blockchain network.



Application of Blockchain

Secure Personal Information

Keeping data such as your Social Security number, date of birth, and other identifying information on a public ledger (e.g., a blockchain) may actually be more secure than current systems more susceptible to hacks.

Blockchain technology can be used to secure access to identifying information while improving access for those who need it in industries such as travel, healthcare, finance, and education.

Voting

Using blockchain technology can make sure that nobody votes twice, only eligible voters are able to vote, and votes cannot be tampered with.

What's more, it can increase access to voting by making it as simple as pressing a few buttons on your smartphone. At the same time, the cost of running an election would substantially decrease.

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Application of Blockchain

Title Transfers

One of the primary goals of blockchain is to take paper out of the equation, since paper trails are often a source of confusion.

If you're buying or selling land, a house, or a car, you'll need to transfer or receive a title.

Instead of handling this on paper, blockchain can store titles on its network, allowing for a transparent view of this transfer, as well as presenting a crystal-clear picture of legal ownership.

Medical recordkeeping

In healthcare domain, patient health records can be stored in a tamperproof manner on national level Blockchain.

Role based and privacy enabled access can be given to patient data stored on Blockchain. This helps doctors of any hospital across India to access patient history, when a patient approaches them for treatment.

Shared Blockchain infrastructure avoids duplication of asset data and maintains transaction history on assets in a consistent manner

BLOCKCHAIN MODELS

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PUBLIC MODEL

- No permission required to participate
- Anyone can join, read, write and commit
- Truly decentralized because of participation of unknown actors
- Highly secure due to more participants
- Finality of transaction could take longer time due to more number of participants in the network compared to private network

PRIVATE MODEL

- Permission required to participate
- Only authorized participants can commit
- Partially decentralized because of participation of known actors
- Secure depending on the size of Network
- Finality of transactions could be better in this model due to less number of participants compared to public networks

BLOCKCHAIN BUSINESS VALUE

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Technology provides a platform for future economic development and possible growth that is worthy of valuation. Gartner predicts that by 2022, many new innovative companies will start using Blockchain technology and at least one business created using Blockchain technology will be worth $10 billion.

By 2025, Blockchain would add a business value that will grow to over $176 billion. This would increase further to $3.1 trillion by 2030. Details are given in Figure:

Forecast: Blockchain Business Value, Worldwide 2017-2030 (Source: Gartner 2017)

ROADMAP FOR BLOCKCHAIN TECHNOLOGY ADOPTION

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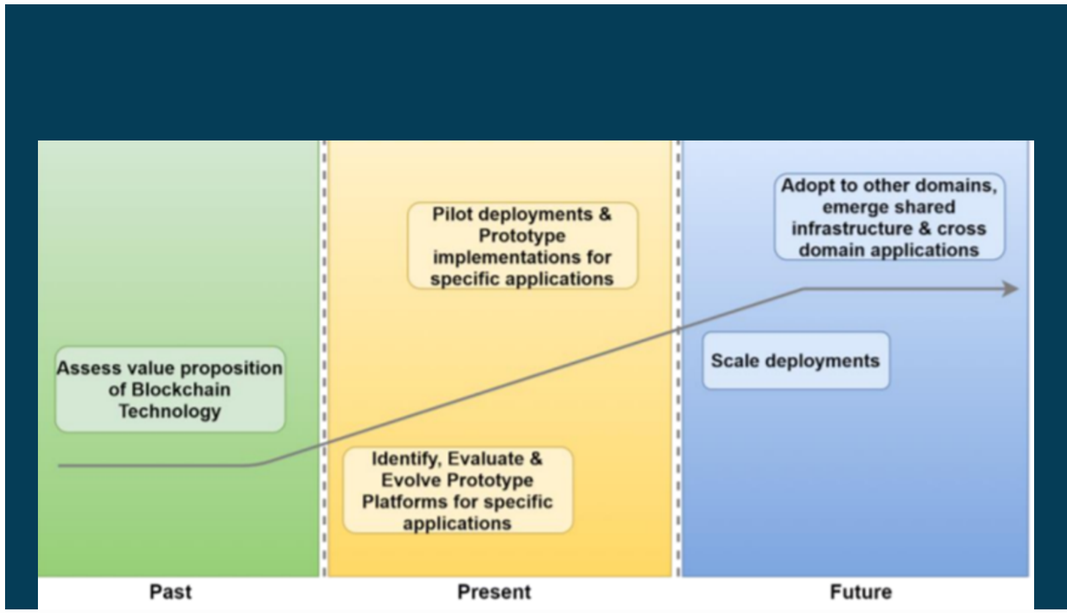
As Blockchain technology is an emerging area, there are various challenges that need to be addressed to adopt and effectively use it in different applications.

Globally, many countries have assessed the value proposition of Blockchain technology in different domains. Currently, efforts are being made in identifying, evaluating and evolving prototypes for specific applications.

Prototype implementations and pilot deployments for specific applications have been successfully carried out.

In order to effectively utilize the technology, there is a need for scaling-up the deployments, exploring other domains and developing it as a shared infrastructure for cross domain applications.



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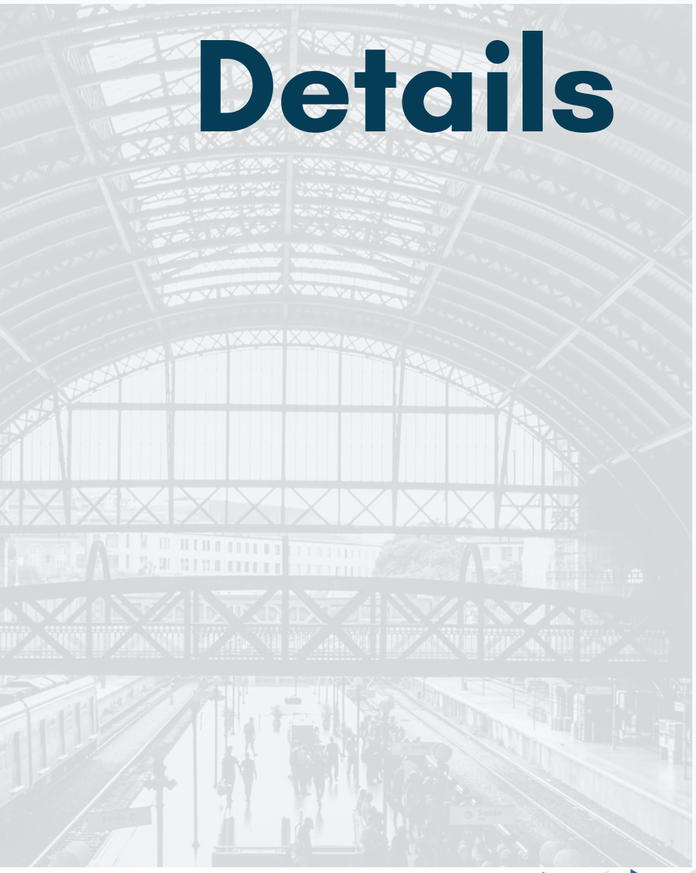
CONCLUSION

The National Strategy to evolve a trusted digital platform for providing e-Governance services using Blockchain lays out overall vision and the development and implementation strategies for a National Blockchain Platform covering the technology stack, legal and regulatory framework, standards development, collaboration, human resource development and potential use cases.

MeitY will work with various Government organizations and other stakeholders in implementing this strategy and realizing the various advantages of the Blockchain technology in terms of enhanced security, trust and its ability to ensure tamper-evident transactions.

Contact Details



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