MSC(CS)SEM 1 2021-2022

BLOCK CHAIN TECHNOLOGY

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Github link:

https://github.com/sahilborse712/Blockchain-Technology

Blockchain Applications

OUTLINE

1. BlockChain
2. Evolution of BlockChain
3. Working
4. Types of BlockChain
5. Applications
6. Discussion
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Blockchain Technology

Blockchain is a combination of three leading technologies:

- Cryptographic keys
- A peer-to-peer network containing a shared ledger
- A means of computing, to store the transactions and records of the network

Network Types

Centralized

Decentralized

Distributed Ledgers

The New Networks

Distributed ledgers can be public or private and vary in their structure and size.

Public blockchains

Require computer processing power to confirm transactions ("mining")

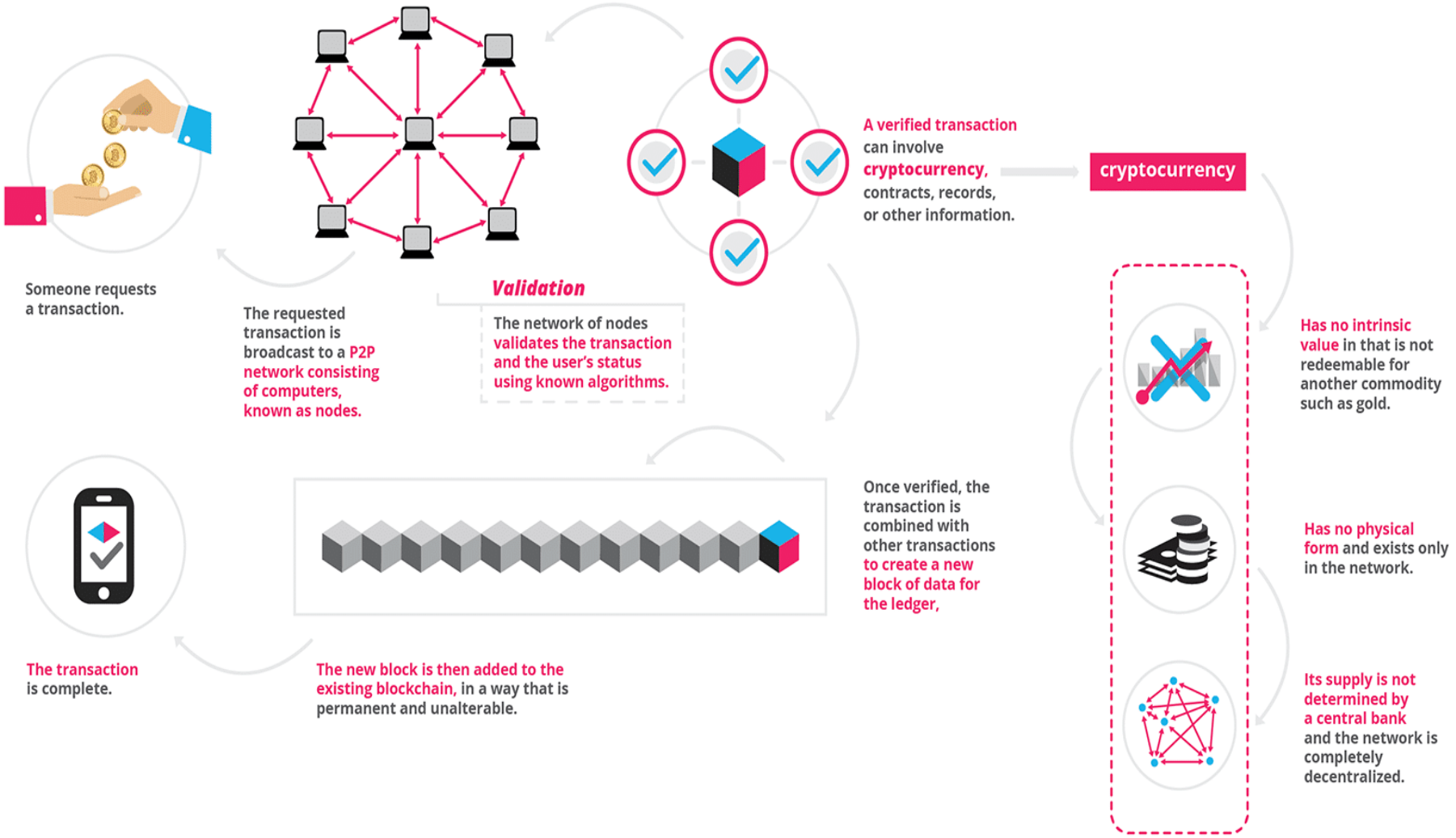
- Users (●) are anonymous

- Each user has a copy of the legder and partipates in confirming transactions independently

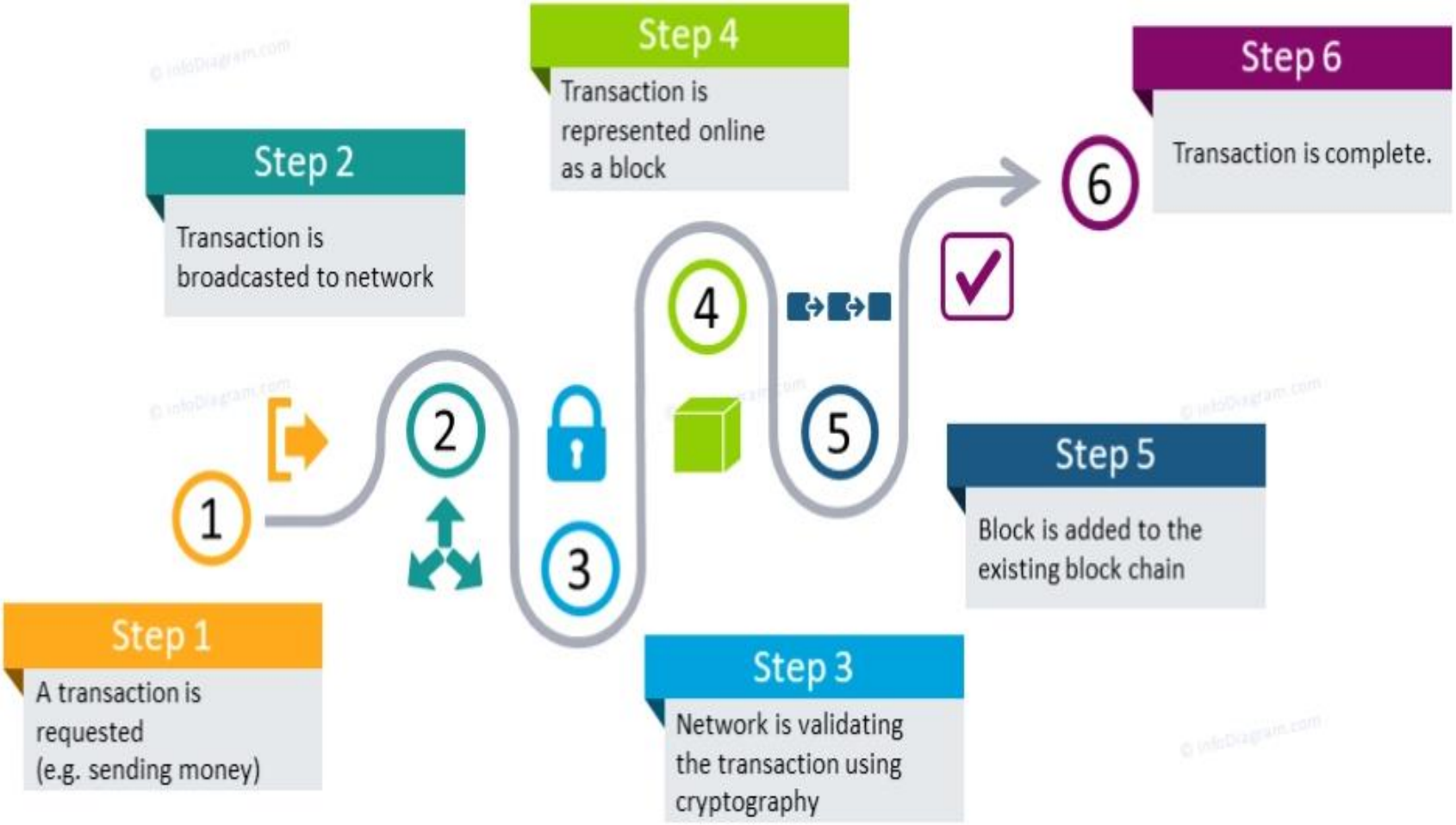
- Users (●) are not anonymous

- Permision is required for users to have a copy of the legder and participate in confirming transactions

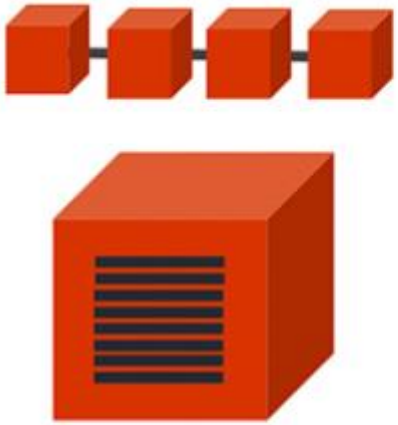
Highlights


Someone requests a transaction.
The requested transaction is broadcast to a P2P network consisting of computers, known as nodes.
Validation
The network of nodes validates the transaction and the user's status using known algorithms.
A verified transaction can involve cryptocurrency, contracts, records, or other information.
cryptocurrency
Has no intrinsic value in that is not redeemable for another commodity such as gold.
Has no physical form and exists only in the network.
Its supply is not determined by a central bank and the network is completely decentralized.
Once verified, the transaction is combined with other transactions to create a new block of data for the ledger,
The new block is then added to the existing blockchain, in a way that is permanent and unalterable.
The transaction is complete.

Blockchain Technology- How it works?

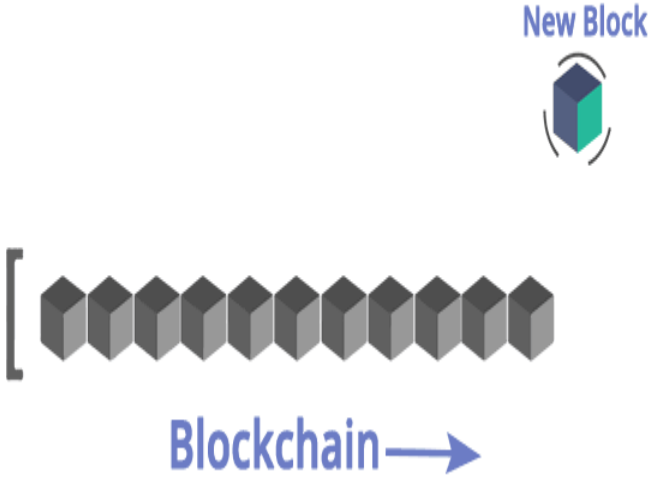


Blockchain Structure

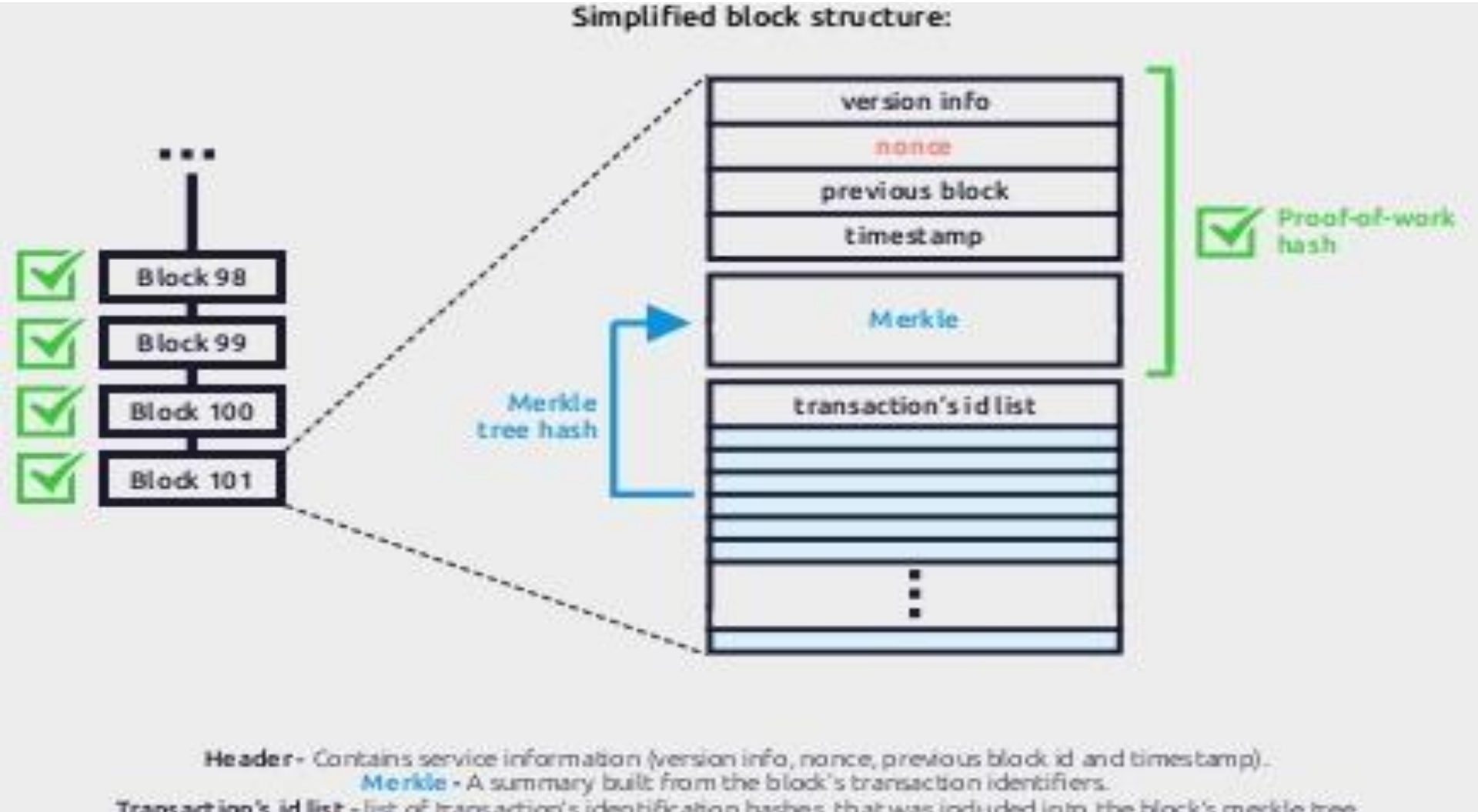


A block contains a number of different transactions

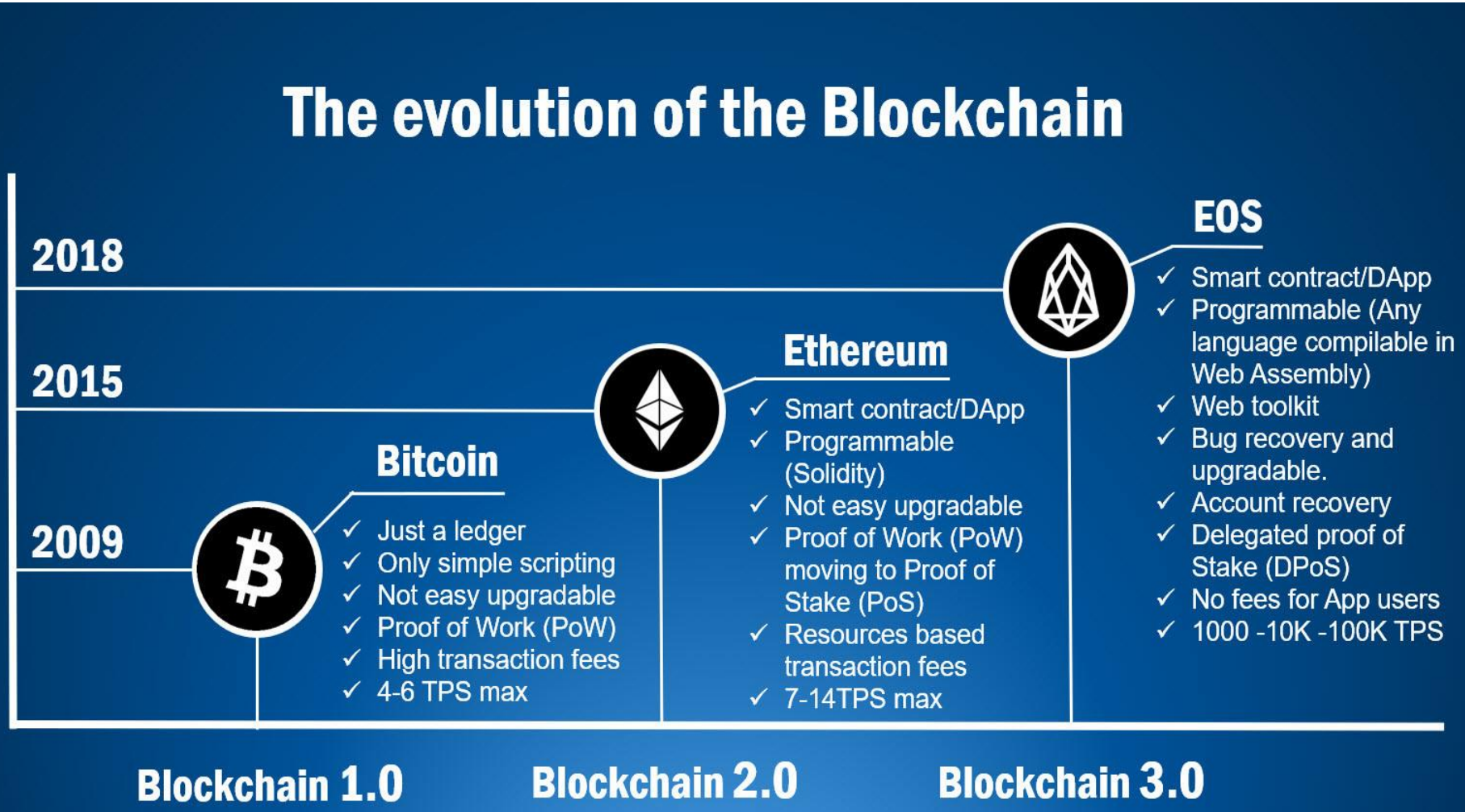
Each block has its own hash, transaction details, nonce and previous hash



What does a block look like?



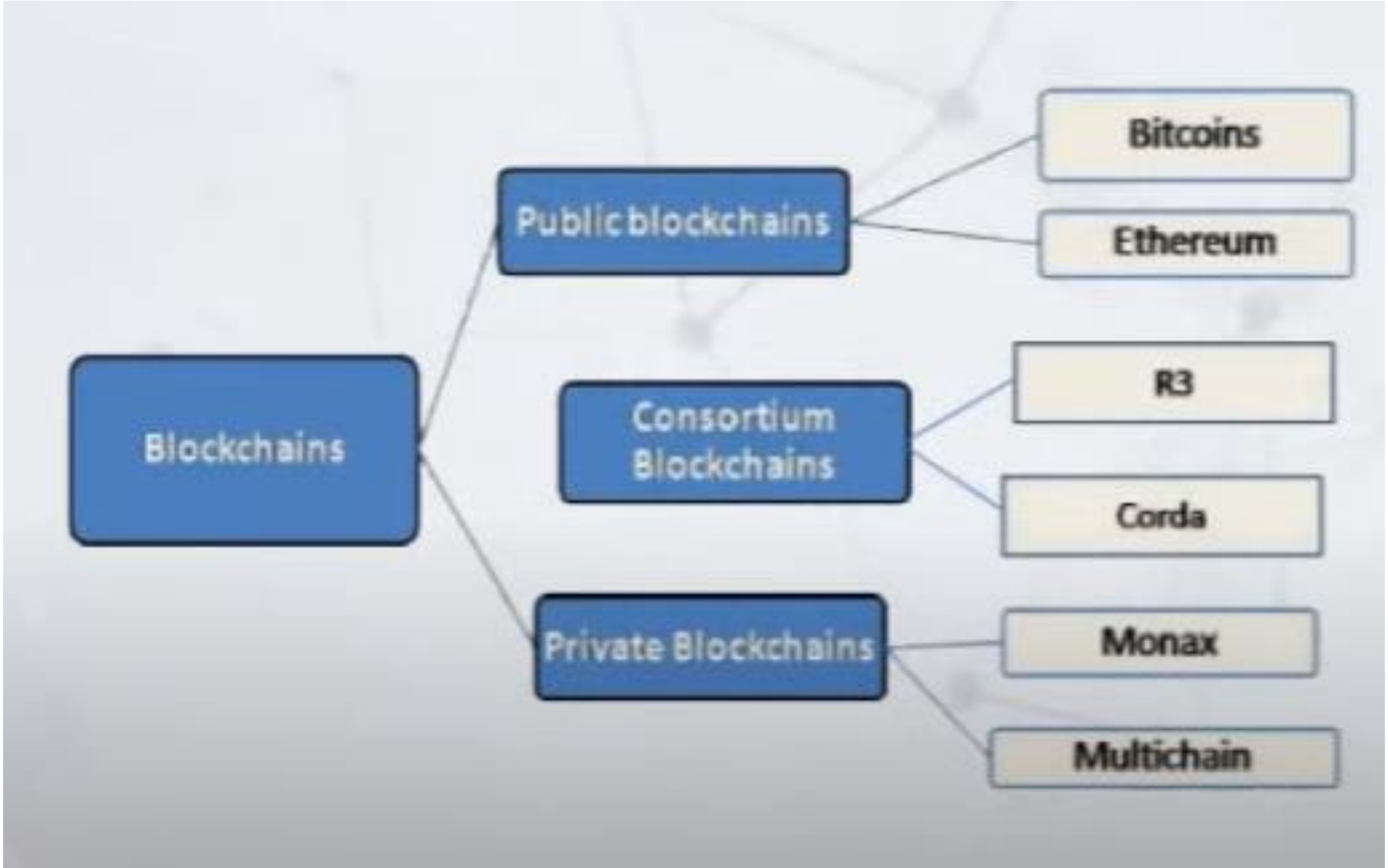
Blockchain Generations



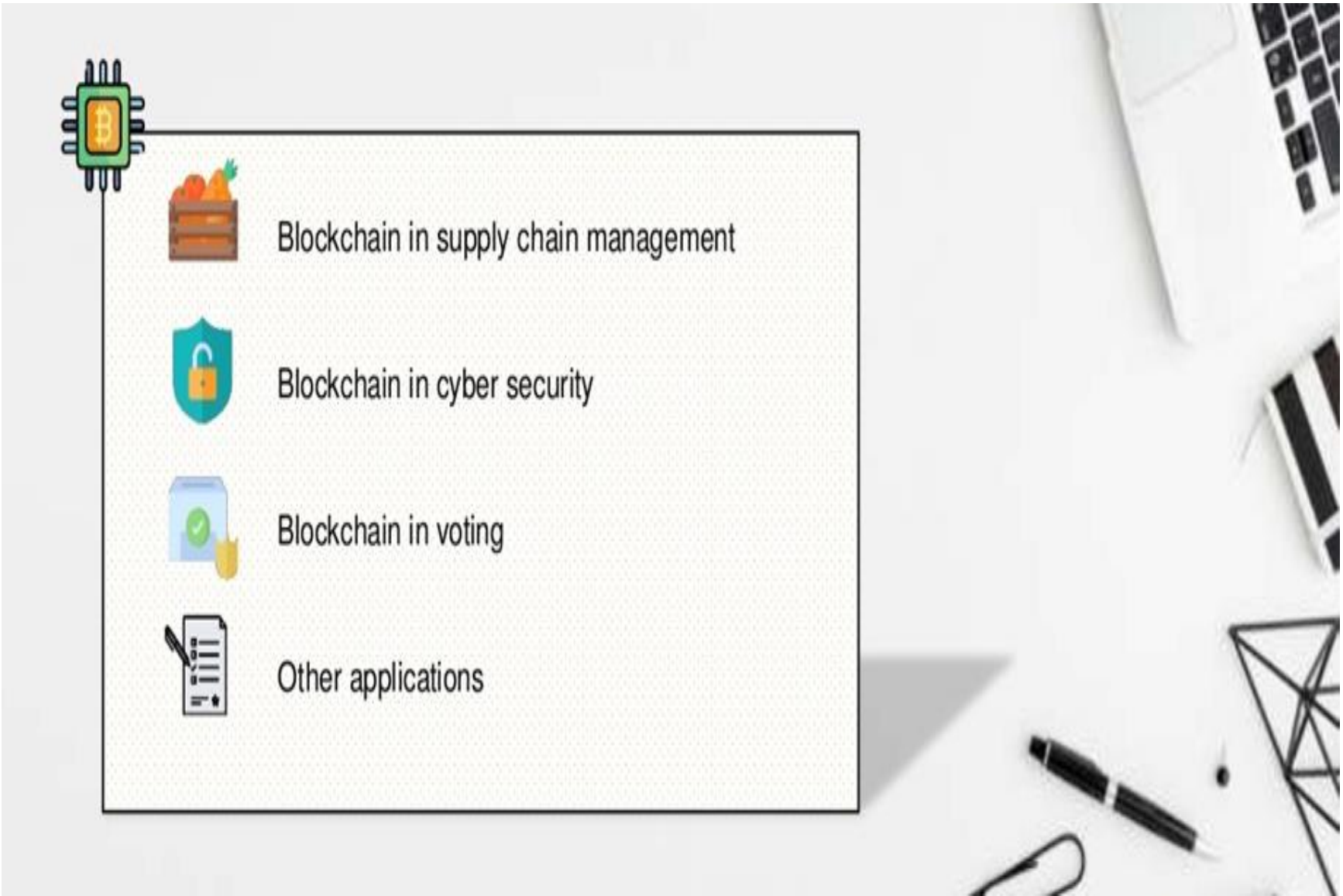
Pros of Blockchain

- Improved accuracy by removing human involvement in verification
- Cost reductions by eliminating third-party verification
- Decentralization makes it harder to tamper with
- Transactions are secure, private, and efficient
- Transparent technology
- Efficiency and speed

Blockchain Types



What's in it for you?



Supply chain management

Supply Chain Management

Blockchain technology can be used to track all type of transactions in a very secured and transparent manner

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Some of the benefits are,

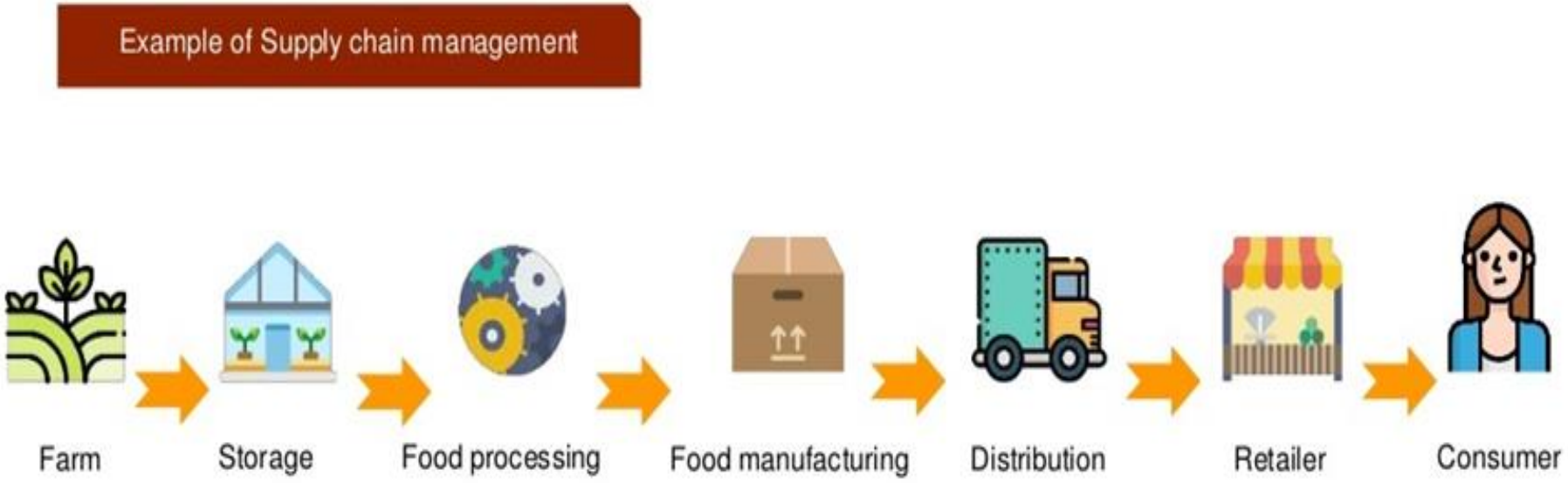
Quick delivery

Reduces cost

Eliminates error

Less human intervention

Supply Chain Management



Cyber security

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Cyber attacks are the biggest threat to the public. However, blockchain is the best solution to protect our data from tampering and improving cybersecurity across industries

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Benefits

High security

Decentralized storage

Traceability

Other applications

Applications


THANK YOU