



Public, Private/Federated and Permissioned Blockchain

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Blockchain features

- Distributed across and managed by peer-to-peer networks of computing devices.
- Transaction data is shared among participants of the blockchain network.
- A transaction is added to the blockchain only after it has been validated through a consensus mechanism.
- The data is immutable because each transaction is cryptographically secured and linked to the previous transaction.
- An asset on a blockchain has provenance because participants can see where it came from and how ownership of it has changed over time.



Differences between blockchain types

- Permissions
- Consensus
- Security
- Performance
- Scalability
- Finality



Public blockchain

- Open sourced and not permissioned, anyone can start running a public node and participate in the consensus process
- Anyone can send transactions and expect to see them in the blockchain
- Anyone can read transactions
- Examples: Bitcoin, Ethereum, Monero, Litecoin, Dogecoin, etc.
- Can have impact on current business models by getting rid of intermediaries.
- No infrastructure costs for running decentralized applications



Federated/consortium blockchain

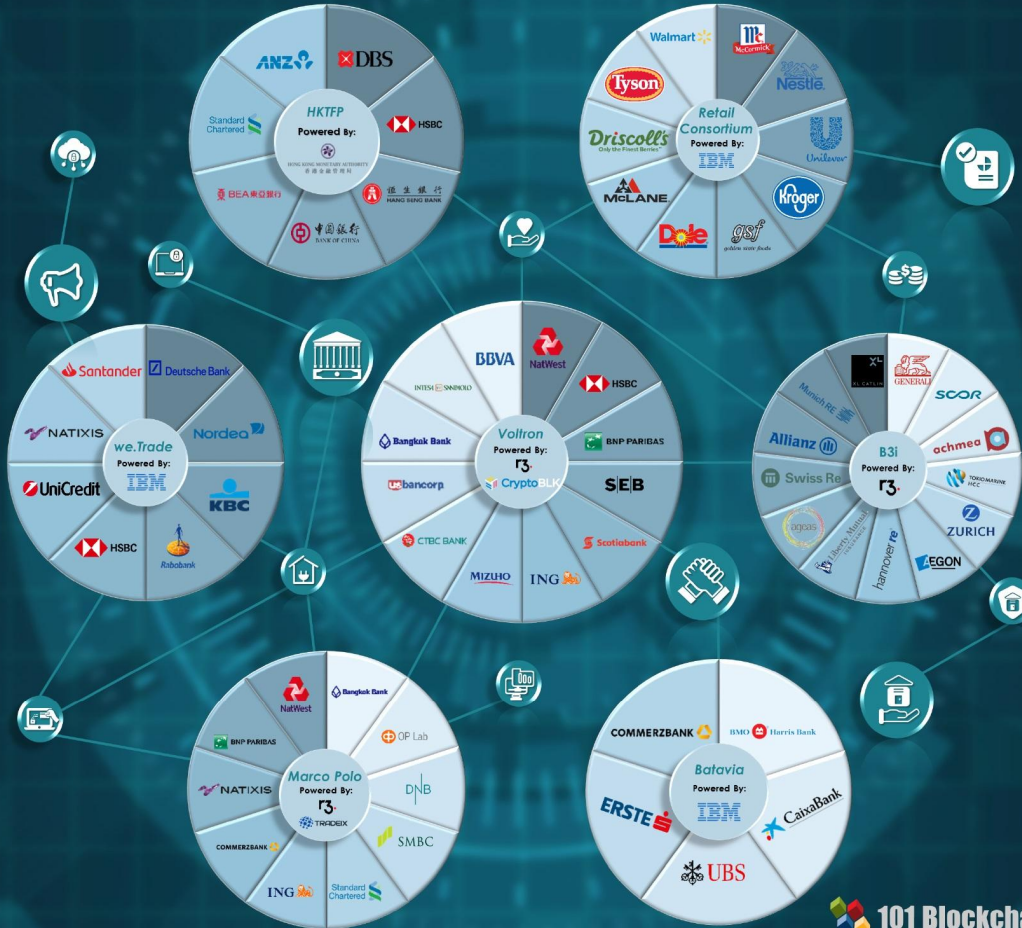
- Federated Blockchains are mostly used in the banking sector.
- Faster with higher scalability, provide more transaction privacy with lower costs.
- The consensus process is controlled by a pre-selected set of nodes; for example, one might imagine a consortium of 15 financial institutions, each of which operates a node and of which 10 must sign every block in order for the block to be valid.
- The right to read the blockchain may be public, or restricted to the participants.
- All the organizations connected in the network follows some strict rules and maintain a good relationship among them.



Use cases of federated blockchain

- Financial services
- Insurance claims
- Data aggregation
- Supply chain
- Organizational record security

FEDERATED BLOCKCHAINS ECOSYSTEM





Private blockchain

- Write permissions are kept to one organization, read permissions may be public or restricted to certain participants.
- Owner can easily change the rules of a blockchain, revert transactions, modify balances, etc. For example, in some case, such as national land registries, this functionality is necessary.
- Greater level of privacy, no risk of 51% attack, cheap transactions.



How to develop with blockchain?

- Blockchain as a Service
- Public blockchain
- Development platforms

