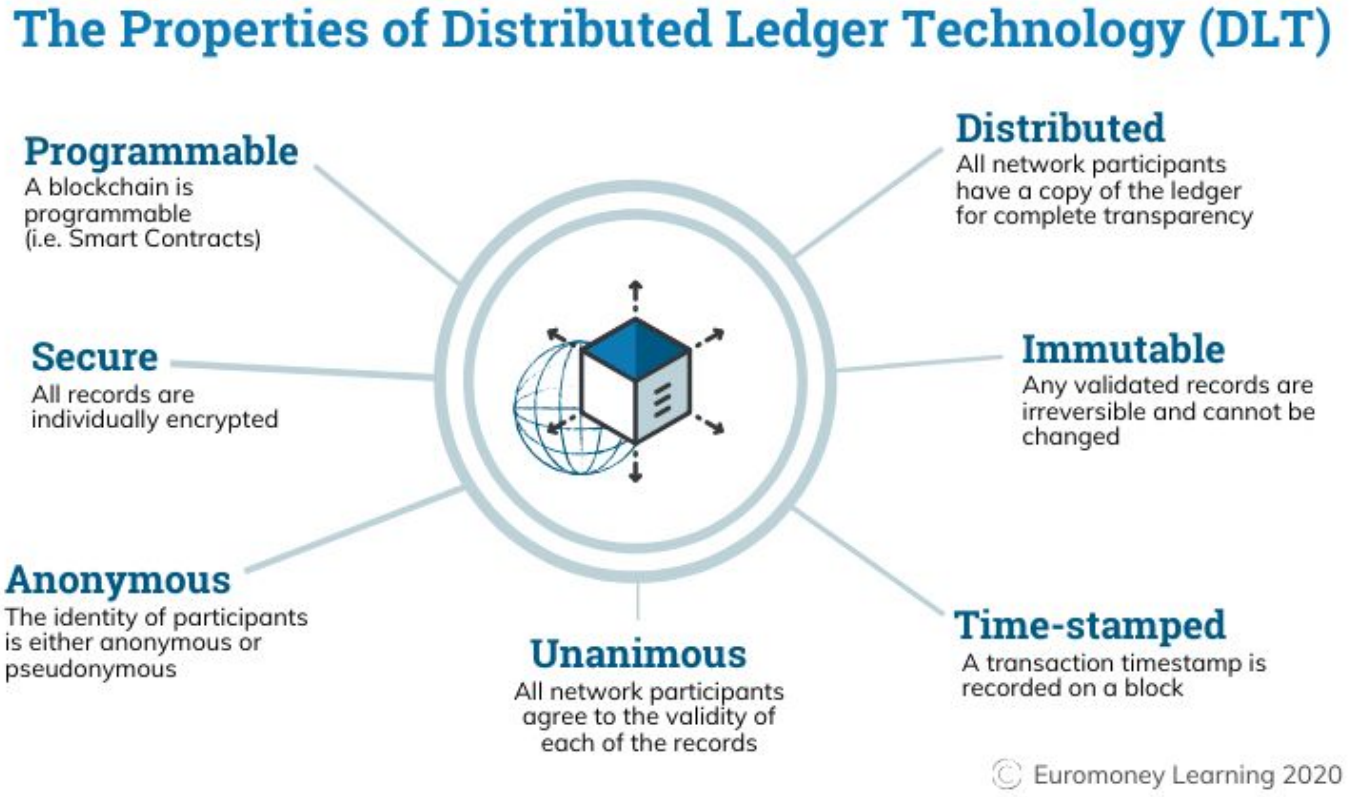
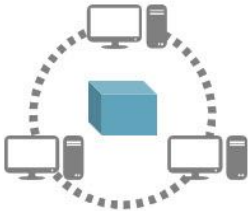
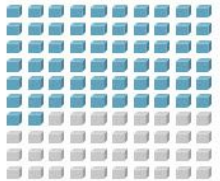


Source : https://www.euromoney.com/learning/blockchain-explained/what-is-blockchain

Blockchain Process Steps







P2P Network ⇨ **Communication** ⇨ **Validation** ⇨ **Verification** ⇨ **Confirmation**

1

Someone in the Peer to Peer network requests a transaction.

2

The requested transaction is broadcast to the P2P network consisting of computers, known as nodes.

3

The network of nodes validates the transaction and the users status using algorithms.

A verified transaction can involve cryptocurrency, contracts, records or other information.

4

Once verified, the transaction is combined with other transactions to create a new block of data for the ledger.

5

The new block is then added to the existing blockchain, in a way that is permanent and unalterable.

The transaction is complete.

Source : https://www.msg-global.com/blog-item/blockchain-moving-beyond-bitcoin

Advantages 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
- Provides a banking alternative and a way to secure personal information for citizens of countries with unstable or underdeveloped government

Disadvantages of Blockchain

- Significant technology cost associated with mining bitcoin
- Low transactions per second
- History of use in illicit activities, such as on the dark web
- Regulation varies by jurisdiction and remains uncertain
- Data storage limitations

4 main types of blockchain technology

	Public (permissionless)	**Private** (permissioned)	**Hybrid**	**Consortium**
ADVANTAGES	+ Independence + Transparency + Trust	+ Access control + Performance	+ Access control + Performance + Scalability	+ Access control + Scalability + Security
DISADVANTAGES	– Performance – Scalability – Security	– Trust – Auditability	– Transparency – Upgrading	– Transparency
USE CASES	■ Cryptocurrency ■ Document validation	■ Supply chain ■ Asset ownership	■ Medical records ■ Real estate	■ Banking ■ Research ■ Supply chain

Picking a blockchain

- Depending on the purpose

Primary Purpose	
Move value between untrusted parties	
Move value between trusted parties	?
Trade value between unlike things	
Trade value of the same thing	?
Create decentralized organization	
Create decentralized contract	?
Trade securitized assets	
Build identity for people or things	?
Publish for public recordkeeping	
Publish for private recordkeeping	?
Preform auditing of records or systems	
Publish land title data	
Trade digital money or assets	
Create systems for Internet of Things (IoT) security	
Build systems security	

Picking a blockchain

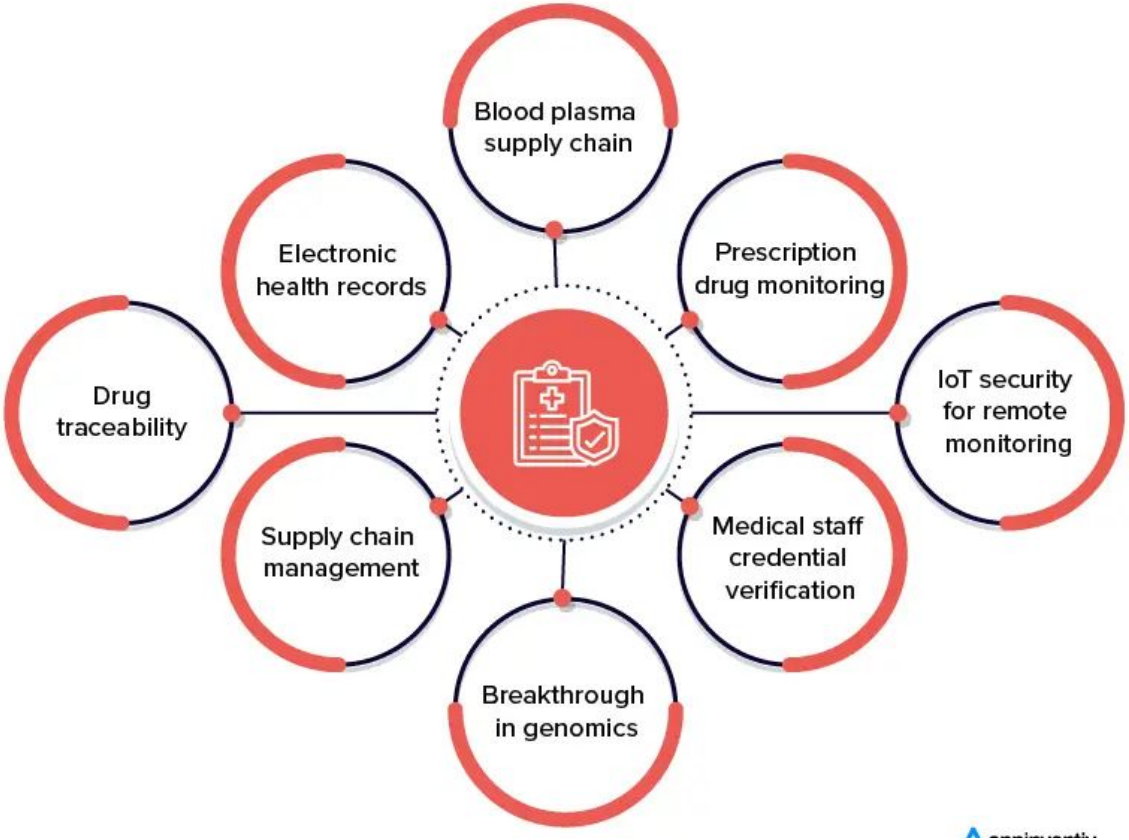
Primary Purpose	Type of Blockchain
Move value between untrusted parties	Public
Move value between trusted parties	Private
Trade value between unlike things	Permissioned
Trade value of the same thing	Public
Create decentralized organization	Public or permissioned
Create decentralized contract	Public or permissioned
Trade securitized assets	Public or permissioned
Build identity for people or things	Public
Publish for public recordkeeping	Public
Publish for private recordkeeping	Public or permissioned
Preform auditing of records or systems	Public or permissioned
Publish land title data	Public
Trade digital money or assets	Public or permissioned
Create systems for Internet of Things (IoT) security	Public
Build systems security	Public

Blockchain Use Cases

Cryptocurrency Coins and Tokens

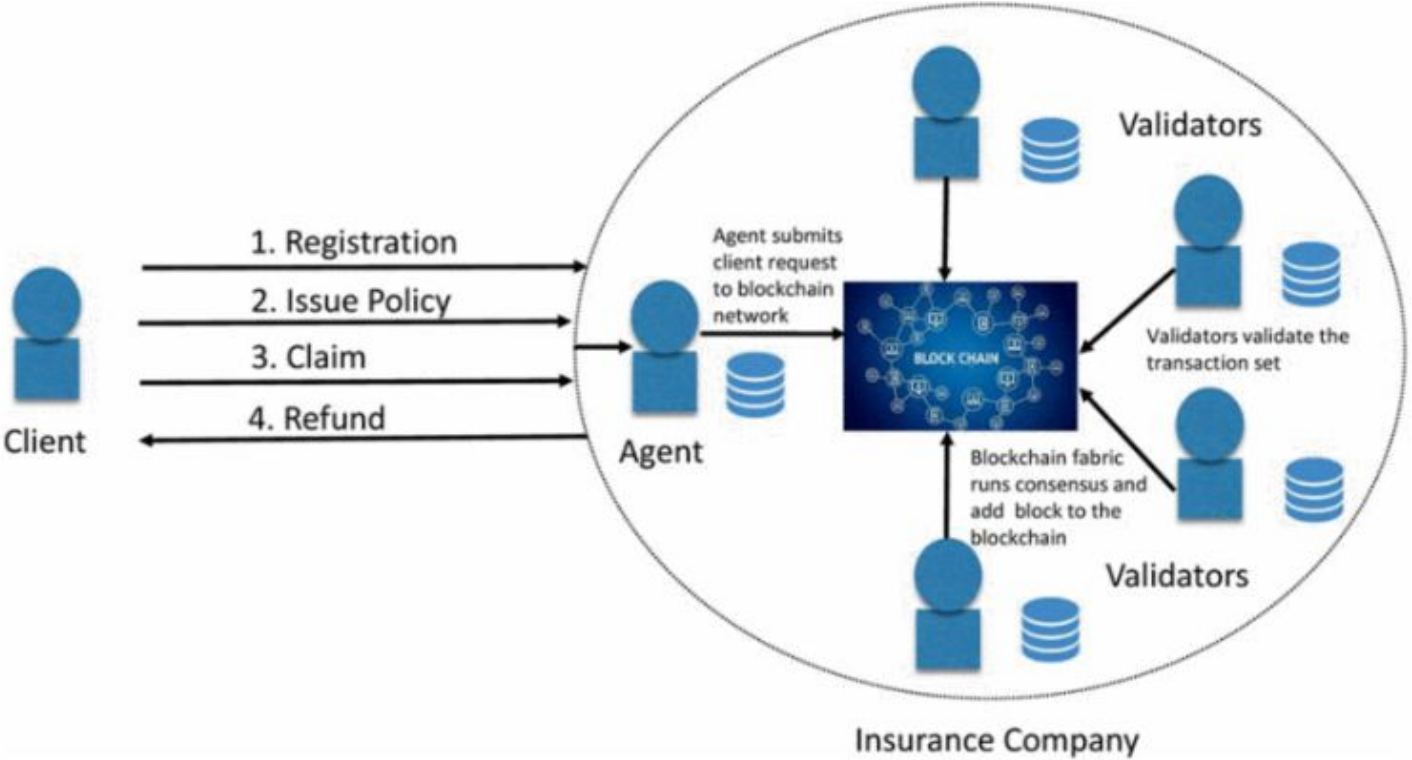
- **Payment tokens:** Cryptocurrencies like Bitcoin and Ethereum
- **Security tokens:** Tokens that are backed by an underlying security, such as real estate.
- **Utility tokens:** Tokens that have a specific use case within a blockchain or crypto ecosystem are called utility tokens
- **Governance tokens:** Tokens that enable users to participate in the governance of a blockchain are called governance tokens.
- **Basic attention tokens:** Users can be paid for their attention, such as to digital advertising, using basic attention tokens.
- **Gaming tokens:** Investors can own coins that both have in-game value and are traded on third-party exchanges.
- **Non-fungible tokens (NFTs):** Investors can own digital tokens that signify ownership of a specific asset.

Healthcare



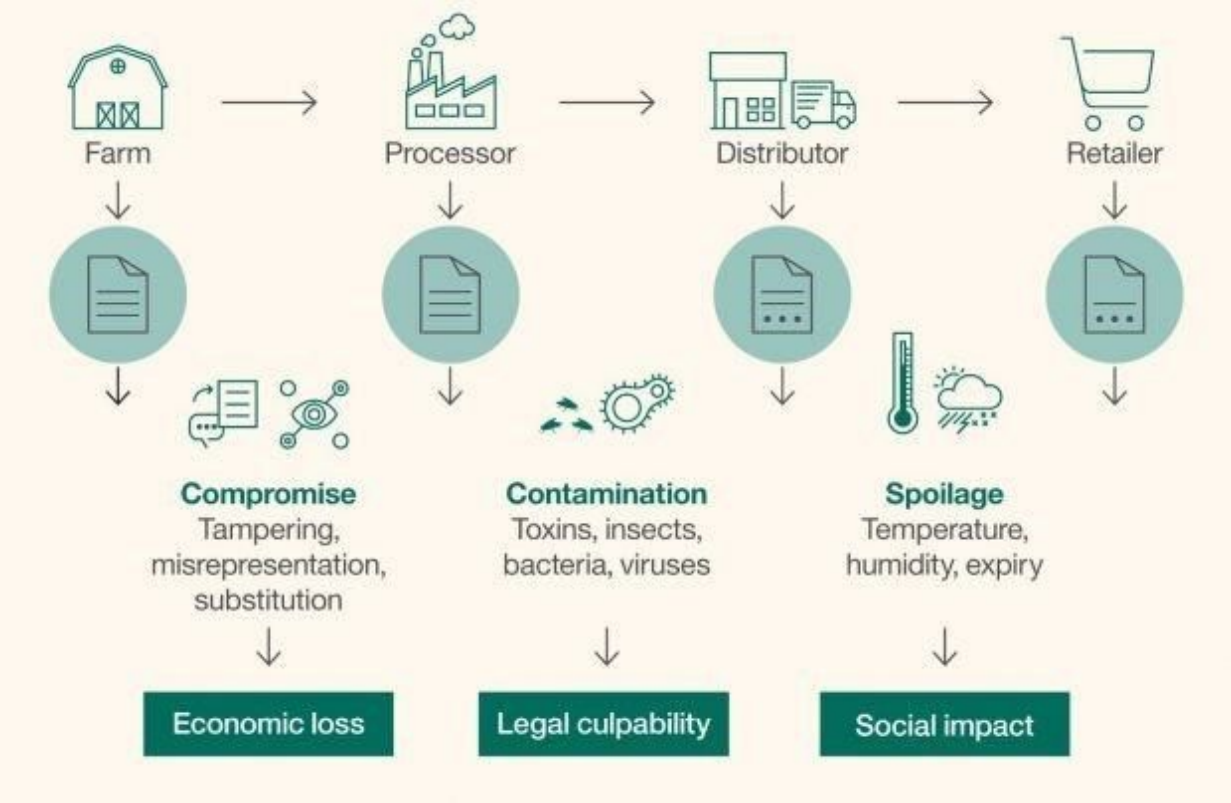
Source: Blockchain in Healthcare and Medicine: A Contemporary Research of Applications, Challenges, and Future Perspectives

Insurance Settlements



Source:Ensuring Better Insurance with a Blockchain Framework (2016)

Supply Chain Management



Food safety
Smart contract
Finance
Inventory Management
Traceability

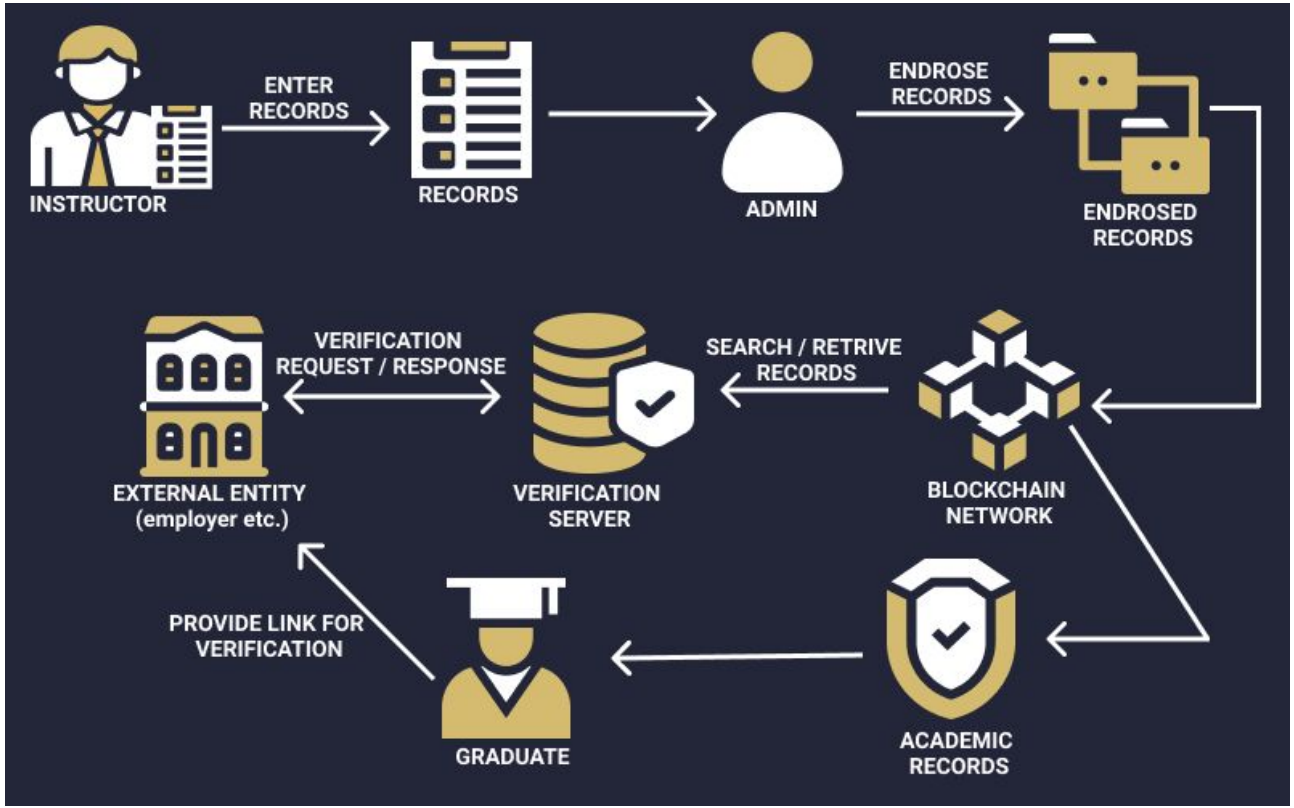
Source:https://race.reva.edu.in/race-lab/top-5-use-cases-of-blockchain-in-supply-chain-management/

Decentralized Finance (DeFi)

	Traditional Finance (TradFi)	Decentralized Finance (DeFi)
Intermediaries	Banks, brokers, insurers, & other institutions	None; transactions intermediated through smart contract code
Custody	Regulated custodian	Self-custody (user wallet)
Loan types	Secured, unsecured, generally fixed maturity	Primarily secured, no maturity
Interest rates	Determined by central bank, as well as supply, demand & risk	Determined algorithmically, based on supply, demand & risk
Risk	Counterparty risk, market risk	Protocol risk, market risk
Risk management	Collateral, credit scoring	Collateral, auto-liquidation
Collateral types	Virtually any asset	Crypto assets
Regulatory oversight	Governments, self-regulatory bodies	None
Intellectual property for lending/trading systems	Held by private firms	Open source code
User identification	KYC/AML process	Pseudonymous
Record keeping	Intermediary accounts	Public blockchain

Source: https://www.gspublishing.com/content/research/en/reports/2021/10/22/3094e0f0-379e-4f11-8dce-7f74a7718eb7.html

Tracking Credentials



Blockchain Voting

Gaming

Media

Real Estate

Travel and Leisure

Entertainment

Art Collecting & Investing