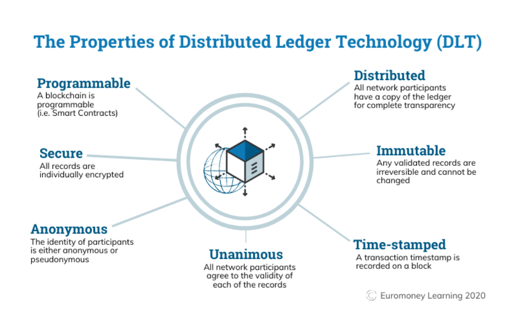
Block chain

[23rd July Induction class]



What problem block chain is solving?

Trust - [we buy products from amazon, flipkart, ... but not something like delivery.in. --]
Since data is generally mutable & no privacy

Privacy - what we are facing now? [No 100% control over data, fb-photos owned by fb not by individuals, we access data
Ideally it should be the opposite. we should own the data & fb. can be allowed to access it]

cross border payments: currently the power is with the banks. [moving from central to decentralized authority]

Some improvement areas:

Enhanced security
Your data is sensitive and crucial, and blockchain can significantly change how your critical information is viewed. By creating a record that can't be altered and is encrypted end-to-end, blockchain helps prevent fraud and unauthorized activity. Privacy issues can also be addressed on blockchain by anonymizing personal data and using permissions to prevent access. Information is stored across a network of computers rather than a single server, making it difficult for hackers to view data.

Increased efficiency and speed
Traditional paper-heavy processes are time-consuming, prone to human error, and often requires third-party mediation. By streamlining these processes with blockchain, transactions can be completed faster and more efficiently. Documentation can be stored on the blockchain along with transaction details, eliminating the need to exchange paper. There's no need to reconcile multiple ledgers, so clearing and settlement can be much faster.

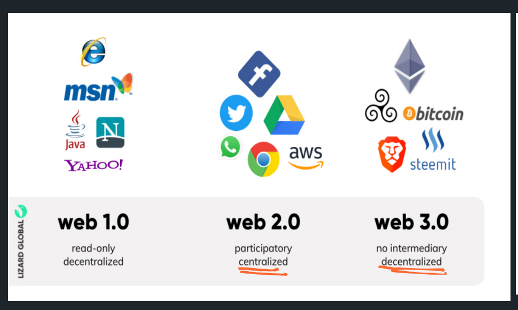
Greater transparency
Without blockchain, each organization has to keep a separate database. Because blockchain uses a distributed ledger, transactions and data are recorded identically in multiple locations. All network participants with permissioned access see the same information at the same time, providing full transparency. All transactions are immutability recorded, and are time- and date-stamped. This enables members to view the entire history of a transaction and virtually eliminates any opportunity for fraud.

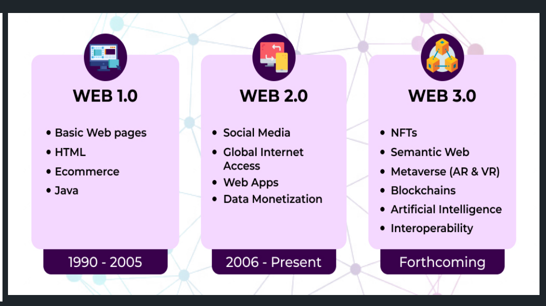
Automation
Transactions can even be automated with "smart contracts," which increase your efficiency and speed the process even further. Once pre-specified conditions are met, the next step in transaction or process is automatically triggered. Smart contracts reduce human intervention as well as reliance on third parties to verify that terms of a contract have been met. In insurance, for example, once a customer has provided all necessary documentation to file a claim, the claim can automatically be settled and paid.

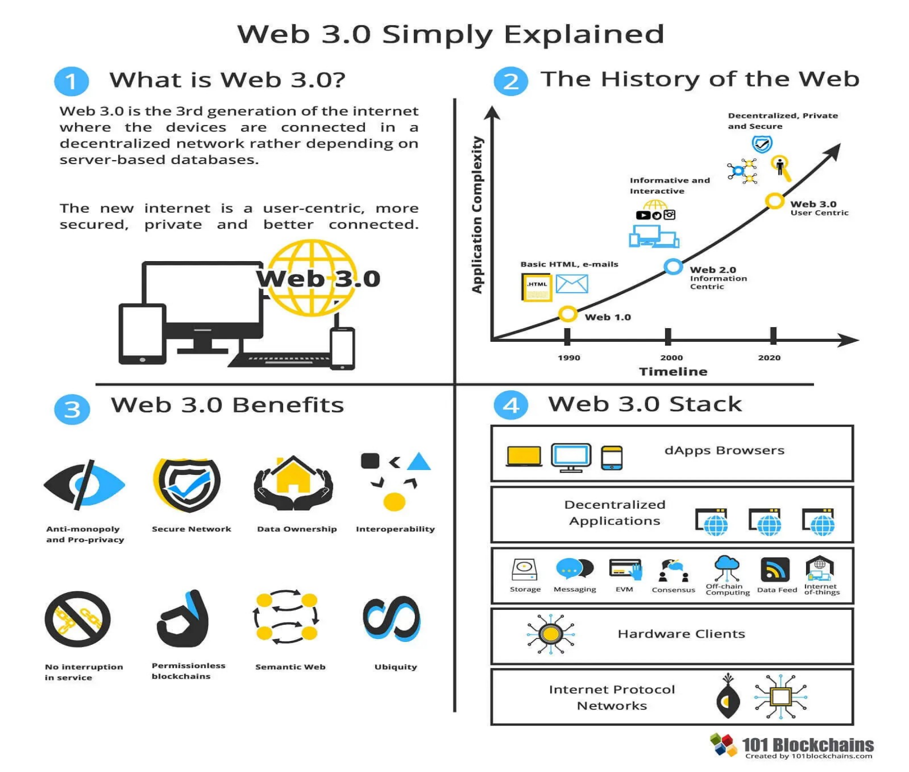
Instant traceability
Blockchain creates an audit trail that documents the provenance of an asset at every step on its journey. In industries where consumers are concerned about environmental or human rights issues surrounding a product — or an industry troubled by counterfeiting and fraud — this helps provide the proof. With blockchain, it is possible to share data about provenance directly with customers. Traceability data can also expose weaknesses in any supply chain — where goods might sit on a loading dock awaiting transit.

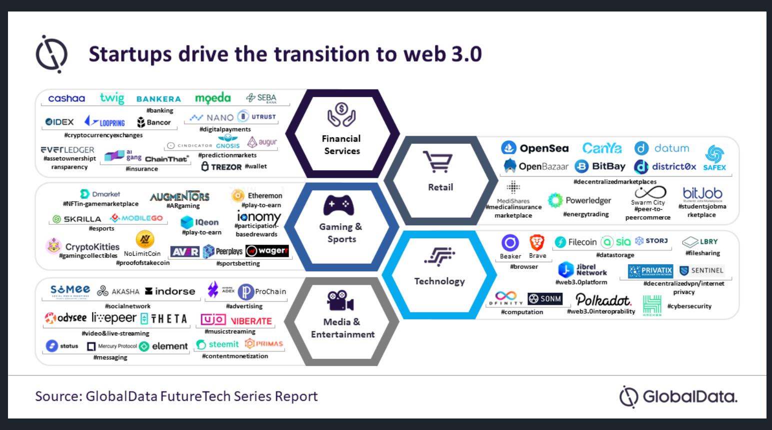
web 1.0 vs web 2.0 vs web 3.0

1.0 : one way communication (like read-only)
2.0 : Two way " - but data entered by the user are owned by the websites
3.0 : " " " - but data will be owned by user









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Interesting Q/A:

→ one general use case

- supply chain. → If user receives an damaged/fake product, its hard to find where the problem started.

≈ In my opinion, it's the time which plays a key role. I have seen multiple cases (especially in logistics) where it takes decades to trace where the problem is. [mail from customer → representative → representative company

Dev/tech team ← manager of the other company (linked with) ← Manager ← Technical person
yes / NO → other company manager → Tech team → & goes on.

≈ As a tech team mem. of some logestic middleware company, I witnessed one priority-I bug [price calculation] took nearly 15 days to identify the issue (to & fro mails) & 1 month to resolve it.

- with blockchain, all companies in the logestics (supply chain) will have a common decentralized database kind of thing.

≈ why a company will agree to share its data?? → May be Partial

≈ If it is like [shared data (some part)], even with traditional db we can achieve the same right??