

## Web 5.0

Ex Twitter chief executive officer Jack Dorsey recently outlined his plans for a new decentralised web platform called Web 5.0, which aims to give people back control of their data and identities. Online 5.0 aims to create a more decentralised web in which the user retains control over their data and identity. The topic has a very high chance of being asked as a UPSC Prelims Science and Technology Question or as a Current Affairs Question, as it has been in the news recently.

### About Web 5.0

The Block Head (TBH), Dorsey's Bitcoin business division, is working on Web 5.0, which aims to create an additional decentralised web that places people in charge of their data and identity. Web 5.0 is a combination of Web 2.0 and Web 3.0 which allows users to control their identities and manage their data on the Internet. Both Web 3.0 and Web 5.0 envisage an Internet free of government or corporate restrictions and the prospect of catastrophic disruptions. The distinction is that Web 3.0 is managed by multiple "venture capitalists and limited partners," rather than being completely decentralised or owned by its users.

### Applications of Web 5.0

As per the plans, the Web 5.0 will have two major use cases which are as follows:

1. **Control of Identity:** The user will have complete control over his/her data, his/her identification account will be stored in a decentralised wallet with the user. This wallet will enable them to use the same account across different Web 5.0 applications.
2. **Control of Data:** All the data that a user has will be stored on a decentralised node on his/her device. Switching between the same kind of applications would be hassle-free as the same data would be compatible with all the applications and it'll be upon the user to decide which data they want to share with the application. Quitting an application won't require to first delete all their personal data and switching to another similar application won't require the user to restart the account creation process or republish their content on the new platform.

### Various Versions of Web

#### Web 1.0

The early World Wide Web 1.0 (WWW) was a fairly limited channel. It was primarily a publishing platform for hypertext documents, that evolved to accommodate multi-media items over time. The capacity to dynamically build web pages and the connectivity of the Web 1.0 architecture with databases enabled Web 1.0 to become an efficient medium of communication. Every big corporation had to build a Web strategy during this time in order to publish business information, engage with numerous stakeholders, and improve internal publications and connections. Executives then had to decide on the Web's function as a customer channel and whether to sell directly or through intermediaries. Companies were pushed to redefine their consumer value propositions in terms of the content and media as a result of these shifts.

## Web 2.0

The Web had become a collaborative medium in Web 2.0, where businesses could tap into the collective strength of distributed users to profit from access to data and network externalities that generate extraordinary value. Thousands of people contribute to Web 2.0 applications, allowing them to constantly update content and adapt. Greater transparency can bring new managerial issues when users collaborate, share knowledge, and pool negotiating power. Users can use reverse auctions, bargain for better prices, and form social movements to put pressure on business executives. The need to cope with transparent marketplaces is foreshadowed by Web 2.0.

## Web 3.0

Web 3.0 is also known as the semantic web. Web 3.0 is the next version of the world wide web, wherein applications and sites would be able to manage data in a human-like fashion utilizing technologies like [artificial intelligence](#) (AI), machine learning (ML), Big Data, as well as Decentralised Ledger Technology (DLT), amongst many others. Information will be stored and shared in a decentralised fashion, which would be a big advance over our current internet generation (Web 2.0), wherein data is mostly stored in central servers. Users and machines will both be able to interact with data. To make the information increasingly rich, meaningful, timely, and available, the semantic web integrates human and progressively available machine intelligence.

Web 3.0's primary features for businesses include richer descriptions of web resources using mark-up language like XBRL (eXtensible Business Reporting Language). Machine learning techniques can then be deployed more effectively to web data to dynamically synthesise meaningful knowledge as grid and cloud computing become more prevalent, and Moore's Law permits more powerful processors. Employing neural networks, genetic programming, as well as other machine learning technologies to user generated information in the future will speed up and broaden the insights gained from the internet.

## Distributed Ledger Technology (DLT)

A distributed ledger (also known as a shared ledger or DLT) is a collection of digital data that has been replicated, shared, and synced across different sites, nations, or organisations. There is no single admin, unlike with a centralised database. Because the data is mirrored in the nodes containing full copies of the data and the data in the blocks is included in timely order, further in the manner of an accounting journal than that of an accounting ledger, an alternative term is sometimes used: RJT for Replicated Journal Technology. To assure replication between nodes, it needs a peer-to-peer network and also consensus techniques. The blockchain network, which can be open or closed, is one example of a distributed ledger design.

A distributed ledger database is replicated and saved an exact same copy of the ledger by each node (device) over a peer-to-peer network, which updates themselves autonomously. The absence of central authority is the key benefit. When a ledger update occurs, each node creates a new transaction, and afterwards the nodes decide about which copy is valid using a consensus mechanism. Once a consensus is reached, all other nodes are updated to the latest, correct version of the ledger. Cryptographic keys as well as signatures are used to ensure security.