

Web 3.0: The New-Age Internet

This editorial is based on <u>"First Principles / Hold the hosannas for web3"</u> which was published in Hindustan Times on 25/09/2022. It talks about the potential of Web 3.0 and related challenges.

For Prelims: Web 3.0, Blockchain Technology, Augmented Reality, Virtual Reality, IoT, Cryptocurrency, Non-fungible tokens, E-commerce, Cybercrime, Genome Sequencing

For Mains: Pros and Cons of Web 3.0, Future Applications and Opportunity for India

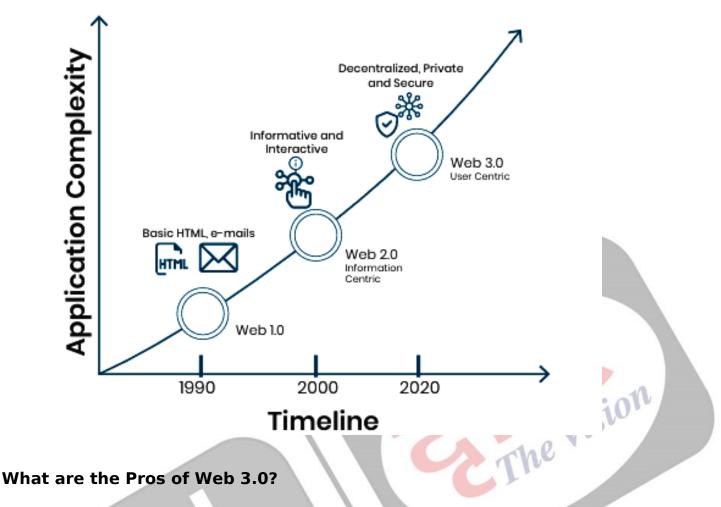
<u>Web 3.0</u> is the third iteration of the internet based on <u>Blockchain Technology</u>. The goal of Web 3.0 is to create an **intelligent, autonomous, connected,** and **open internet**. As we move towards Web 3.0, one major trend is expected to be decentralisation. In essence, it is a concept that **transfers power** from a single person or body to the masses.

India has been one of the early proponents of Web 3.0 technology. According to the **Cryptotech Industry** in India 2021 report by NASSCOM and WazirX, India is home to more than 230 Web 3.0 start-ups already.

With the advancement of internet technology with Web 3.0, there is a significant probability of **technology becoming weaponized, cyber threats becoming more prevalent,** and challenges to national security may arise. Therefore, it is vital to examine Web 3.0 closely for its future viability and sustainability.

What are the Different Versions of Web?

- Web 1.0: It is considered the first phase, where most of the web accessible to people
 was "Read-only", allowing users to simply read content and not really interact with it.
 - This included content like news sites, portals and search engines.
- Web 2.0: With Web 2.0, the major new aspect that came into play is interaction. The trend
 of 'liking' something on social media, 'commenting' on videos, and sharing interesting
 content became increasingly popular.
 - This also became a phase where **ads started popping on pages**, again based on these data bits, and **monetisation** of content started growing.
- Web 3.0: Web 3.0 represents a new phase in the internet's evolution i.e., a visually dynamic,
 semantic and spatial Web with concept of decentralisation, openness, and greater user utility.
 - It combines a bouquet of disruptive technologies such as blockchain, <u>Augmented</u>
 <u>Reality</u>, <u>Virtual Reality</u>, <u>Cloud</u>, <u>Edge</u>, <u>IoT</u>, <u>cryptocurrency</u> and runs on an <u>Al-based</u>
 <u>analytics</u> layer for data-driven insights.



- Open and Transparent Network: Web 3.0 is the open network, all applications and programs are developed using open-source software.
 - Essentially the code for development, which is a virtual resource, is public for the community and the development process is also kept transparent.
- Seamless Ecosystem: The centralised control over data by platform companies moves into the hands of the individuals with Web 3.0, using smart protocols on blockchain that eliminate the need for third parties.
 - Therefore, pushing a trustless, permissionless and seamless ecosystem.
- Direct Relationship Between Sellers And Customers: Web 3 technology can also eliminate middlemen, allowing sellers and customers to interact directly.
 - Non-fungible tokens are already enabling much of this, largely in static digital art, but the arrangement could easily be replicated in music, films, and other mediums.
- Personalised Experience: It has the potential to blur the lines between the physical and digital world. For instance, in the case of <u>e-commerce</u> using Al-powered Web 3.0, sellers would be able to better understand the buying needs.
 - They will show those products and services to buyers that they are interested in buying.
 Also, buyers will see more useful and relatable advertisements.
- **Independent Monetization**: In centralised content management, user-generated content typically belongs to the platform it is published but Web 3.0 can empower creators by giving them a better **opportunity to monetize.**
 - About 2 million professional content creators in India can benefit from this.

What are the Cons of Web 3.0?

• Rise in Cyber Crimes: According to some experts, regulating Web 3 would be difficult. They further claim that decentralisation can bring new types of cyber-crime in the picture. It might lead to an increase in cyber-crime and online abuse, among other things.

- Cryptocurrency-based crime remains a significant issue to address, especially given that rising overall transaction volumes mean the value of illicit transactions is increasing.
- Lack of Grievance Redressal Mechanism: Due to its decentralised nature, it raises a question about whom to approach in case of grievances and who is accountable for data breach.
- Lack of Censorship Mechanism: Web 3.0 remains silent on censorship. It might give birth to obscene and provocative things.
 - Also, removal of obscene or <u>defamatory information</u>, photos or videos will be challenging for national and international authorities.
- Scalability Concern: Scalability of Web 3.0 remains a major concern, since it is based on blockchain technology. Due to blockchain technology's append-only data storage mechanism, it cannot be modified, and since demand is increasing, storage capacity is limited.
- Regulatory Vacuum: The Web3 industries are still navigating the regulatory space in India
 which is not cemented as of yet. Additionally, many countries have not yet embraced space and
 defined clear protocols for its use.

What Should be the Way Forward?

- Opportunity for India: India has used technology in shaping its domestic socio-economic development. This technology has brought in greater inclusion and impactful societal outcomes.
 - For instance, through <u>Aadhaar</u>, <u>Jan Dhan</u>, <u>UPI</u>, <u>CoWin for vaccination</u>, India has built <u>low-cost</u>, <u>high-impact tech-for-better-life innovation</u>.
 - In line, India can also leverage this early development stage of Web 3.0 by leading and playing the role of a catalyst.
 - Web 3.0 can accelerate the value of <u>India's digital economy</u>. With such opportunities, there is a need to encourage and incentivise the startup ecosystem to **position India well on the Web 3.0 Map**.
- Revitalising E-Citizens and E-Governance: Web 3.0 can be utilised for better user experience
 of digital government services as well as better-quality data for more evidence-based
 policymaking.
 - From the government's perspective, cross-ministerial services can be built more quickly through blockchain technology.
- Focus on Interoperable and Ethical Standards: As all technologies evolve, the evolution of the internet is inevitable, to make Web 3.0 a strong propellant of global economic growth, prompt actions need to be taken by nations and industrial bodies to have open, ethical, and interoperable systems with solid standards.
- Decentralised Science (DeSc): Web 3.0's decentralised nature can be utilised in the fields of science and research to eliminate barriers of patenting and utilising the available resources for global good.
 - For instance, blockchain technology was used to store and classify vast amounts of data relating to the virus's DNA genome sequencing.

Drishti Mains Question

Discuss how India can leverage the potential of Web 3.0 for its domestic socio-economic development.

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