IMPLEMENTING WEB 3.0 IN SERVICE SECTOR

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Abstract—

In this Article , we will look at the current notions around Web 3.0 and how they differ from Web 2.0. Web 3.0 makes extensive use of blockchain technology to improve peer-to-peer interactions while removing the need for middlemen. This leads to cheaper prices for people and companies using user networks while threatening giant firms' centralized control of information and services. As a result, Web 3.0 is both a natural continuation of Web 2.0 and a shift in perspective with the potential to revolutionize numerous businesses and online interactions. We then highlight successful use cases, emerging trends, and key challenges that innovators are apt to face web 3.0. Finally, we address actions that organization and managers can take to prepare for the changes to come.

Introduction

The New York Times published an article in 2006, as "Web 2.0" was starting to take form, asking if the Internet of the future (Web 3.0), would be sophisticated enough to provide answers to fundamental queries, offer advice, and resolve common problems. (Markoff, 2006). Obviously, the response to this question is a resounding "Yes!" at this point. In reality, over the past 15 years, improvements in mobile computing, machine learning, and artificial intelligence have allowed the Internet to advance so quickly that a full number upgrade is no longer necessary. What is Web 3.0, then? The term "Web 3.0" now refers to a future state of the Internet with a number of structural changes, including: (1) the incorporation of blockchain and cryptocurrency into its design; (2) a return to the peer-to-peer principles of the early Internet; and (3) a cultural critique of Web 2.0 centralization by big businesses. These modifications are anticipated to have a wide range of effects on the Internet and how online companies are developed going forward. The concept of Web 3.0 is characterized by a decentralized digital environment where access to fundamental services is not monopolized by any single entity, according to some viewpoints

REVIEW OF LITERATURE

In the 1980s and early 1990s, offices, libraries, and schools were where many users first met the early version of the Internet (Web 1.0), which was comparatively decentralised. The Internet was not under the control of a single organization, and anyone was free to develop on top of its free protocols, including HTTP for websites, SMTP for email, IRC for chat, and FTP for file transfers. Theoretically, anyone could locate, transmit, and receive information if they knew the address of a recipient or destination. Real-time contact on the Internet became more widely used in the middle of the 1990s thanks to advancements in chat room and instant messaging clients.

The main motivation behind Web 2.0, a more dynamic Internet where all users were online at once, was to solve the content issue. where, even if unconsciously and passively, all users were both consumers and producers.

As companies gathered data and services into platform networks, once open protocols started to be closed off and rented out to them. For companies creating web browsers and ancillary software, such as Microsoft's Internet Explorer/Edge and Google's Chrome, online browsing via HTTP turned into a competitive field. For instance, Google's SMTP-based Gmail email application gathers user behaviour data and also integrates with other Google applications to lock users into the Google ecosystem, enabling Google to collect even more data and track users' online activities.

I. METHODLOGY

   a) Web 3.0 as the Next Stage of the Internet

   Decentralizing valuable content and services through the use of distributed ledger technology, also known as blockchain, is a key component of Web 3.0. At its most basic level, blockchain describes a digital accounting system that keeps track of all state changes over time and documents "who owns what." The primary innovation provided by blockchain is the

distribution and decentralisation of data storage, preventing any one entity from unilaterally controlling or manipulating information because, once documented, it is transparent, immutable, and traceable. (Casino et al., 2019; Zheng et al., 2017). This feature of blockchain directly addresses statelessness because state is saved on the blockchain in a manner that is visible to everyone and cannot be unilaterally appropriated, thinking back to the development of the Internet.

Additionally, some functions that were not possible with earlier processing systems are now possible thanks to blockchain technology. It enables code to be written in a way that firmly establishes how duties will be carried out in the future and forbids any one entity from altering the rules. For instance, the protocol for Bitcoin stipulates that there will only ever be 21 million bitcoin (tokens) in existence. These steadfast promises also cover non-fungible tokens (NFTs) and decentralised autonomous organisations (DAOs) built on top of blockchain protocols, in addition to cryptocurrency applications. For example, if a programmer creates an application on top of the Ethereum or Solana blockchain, they can be sure that the commitments encoded in it will carry out in perpetuity even if the individuals who created the protocol pass away. This alters everything!

b)   Web 3.0 as a Peer-to-Peer Renaissance

Online communities are an important group of company stakeholders (Fisher 2019), providing product-enhancing feedback as well as new market information and capital (Dahlander & Frederiksen, 2012; Murray et al., 2020). However, Web 2.0 online groups frequently struggle with encouraging desirable behaviours and discouraging inappropriate ones (O'Mahony & Ferraro, 2007). Applications for Web 3.0 have the potential to better manage peer-to-peer exchanges. For instance, the decentralised company rLoop has over 1,600 engineers who work virtually together on tasks like creating a pod for the Hyperloop.

rLoop leverages blockchain technology to create tokens that represent the intellectual efforts of individuals. Smart contracts, integrated with the blockchain system, enable automatic profit distribution among members based on their distinct contributions. By utilising blockchain, this guarantees that each contributor is paid. This use of blockchain ensures each contributor receives compensation for their respective contributions. Overall, these peer- to-peer interactions have the potential to produce user-developed content, applications, and services that may not have been possible with a Web 2.0 infrastructure.

c)   Web 3.0 as a Cultural Response to Web 2.0

Web 3.0 aims to resolve the issue that a few powerful companies control access to what was initially intended to be an open, public utility and make money from it. (i.e., Web 1.0). Here, the problem is less that resourceful people and businesses found methods to add value to something that was meant to be free, but rather that such a small percentage of the population now has access to priceless knowledge and services on the Internet.

Web 3.0 thus enables a direct connection between creators and users so that value no longer mainly accrues to platforms and aggregators, in response to the rise of Web 2.0 intermediaries. Web 3.0 reallocates value to those who produce, even though it does not do away with monetization from the system. Here, the problem is less that resourceful people and businesses

found methods to add value to something that was meant to be free, but rather that such a small percentage of the population now has access to priceless knowledge and services on the Internet. Web 3.0 thus enables a direct connection between creators and users so that value no longer mainly accrues to platforms and aggregators, in response to the rise of Web 2.0 intermediaries. Web 3.0 reallocates value to those who produce, consume, and maintain and improve the network, even though it leaves monetization in place. Web 3.0 specifically creates self- sovereign identities made up of user behavioural data and records of what they make and own, allowing them to take control of their own data.

II. WHAT ARE WE BUILDING

Despite the fact that Web 3.0 is still in its infancy, funding, development, and activity are all accelerating quickly. Web 2.0 has a significant impact on how quickly Web 3.0 is developing and expanding. People and organisations can learn more quickly than ever, and "codeless" tools are already available for creating new tokens, smart contracts, and even DAOs. That said, a select group of application categories presently dominate Web 3.0. Applications of blockchain technology that are setting the groundwork for Web 3.0 are reviewed in this section.

• Cryptocurrencies and Decentralized Finance (DeFi):- Bitcoin and decentralised banking are two of Web 3.0's most well-known applications. (DeFi). The main purpose of many of the biggest Cryptocurrencies (based on market capitalization) is to serve as the native token of a blockchain protocol. For instance, the native currency of the Bitcoin blockchain system is Bitcoin ($BTC). The quantity of these Cryptocurrencies is frequently transparent and set, they can be freely transferred between users without the interference of a third party, and they can be purchased and sold for fiat money on centralized exchanges like Finance and Coin base. Additionally, the blockchain protocols of Web 3.0 are not free, in contrast to the open protocols that support Web 1.0 and Web 2.0. On a blockchain network, adding, changing, or removing information "costs something."

• Non-Fungible Tokens (NFTs) and Digital Ownership: - Around 2014, advancements in blockchain technology presented a new class of tokens. Unlike Cryptocurrencies, which use fungible token technology and have no difference between one token and another (i.e., 1 $BTC = 1 $BTC), NFT technology allows each token to be cryptographically distinct. This shift triggered a technological and societal revolution. The electronic version is accessible at: https://ssrn.com/abstract=4082462 12 movement. On the one hand, NFTs and Cryptocurrencies are similar in that both are tokens that live on a blockchain, similar to files saved on a computer or cloud server. NFTs, on the other hand, are essentially distinct from Cryptocurrencies. While Cryptocurrencies can be fractionalized or decomposed, allowing for the trading or exchange of parts of a cryptocurrency, this method does not work for NFTs.

III.FEATURES

• The use of blockchain and crypto: Web 3.0 will have a major impact on blockchain technology because it will change the way end users interact with digital technology. Cryptos are developed with Web 3.0 to pay content producers, who would then earn tokens each time a user viewed their work.

These three technologies will complement each other well because they are independent, interconnected, and interoperable. The process is based on smart contracts, which perform duties such as transactions, censorship resistance, anonymized P2P data storage, and app sharing. It would alter how an organization does business as well as empower artists and users.

• Ubiquitous connectivity and IoT support: Interaction and connectivity will set Web 3.0 apart from its forebears. Data and information will be more linked than ever before thanks to semantic metadata. IoT is the pinnacle of connectivity; users can obtain data from multiple apps at any time and from any place, increasing user engagement. Access to information and the internet suggest that we will no longer be limited to laptops, PCs, and smartphones, but will instead have access to more advanced smart devices such as the Internet of Things. (IoT).

• Foundations in semantic web infrastructure: The concept of the "semantic web" is a crucial aspect of Web 3.0, introduced and named by Tim Berners-Lee. It refers to an interconnected network of data that can be processed and analyzed by machines, potentially revolutionizing our interaction with the Internet by making it more intelligent and intuitive. By leveraging this technology, we can unlock the full potential of the web and create a more efficient and effective digital experience. In Web 3.0, semantic metadata will encourage more data sharing. As a result, the user experience moves to a higher level of connectedness that makes use of all available data. The semantic web will help to educate the computer on what the information means, allowing artificial intelligence to create real- world applications that make better use of the data.

• Decentralization: One of the most obvious Web 3.0 characteristics is the growth of decentralised networks. Decentralized and distributed networks are an essential component of the web 3.0 framework, allowing users to trade or share data without the use of intermediaries, an absence of ownership, or a breach of user privacy. Web 3.0 places a strong emphasis on the idea of "decentralized data," which refers to the consumerization of data management.

CONCLUSIONS

For a variety of factors discussed in this paper, Web
3.0 has its detractors. Furthermore, based on the audience and the futurist orator, the arrival of a true Web 3.0 appears to be both a distant aspiration and a near-term reality. Many

problems with the current architecture are the result, especially with the oligopolistic dominance held by a select few titans. By selling user data and utilizing targeted advertising while also invading users' privacy, these businesses make huge profits. The entire population is progressively criticizing Silicon Six, and even influential institutions like legislators are starting to act to stop them.

Many individuals want an opportunity to try out a new system, which is exactly what Web 3.0 provides, albeit with a more sophisticated notion. However, the introduction of Web 3.0 might exacerbate various social and economic issues, which is an enormous concern.

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