Chapter 2

Web 3.0 Revolution in the Finance Industry:
Exploring Blockchain and Decentralized Finance

Pooja Lekhi
University Canada West, Canada

ABSTRACT

The emergence of Web 3.0, or the decentralized web, has the potential to transform the finance industry. Web 3.0 introduces new technologies such as blockchain, decentralized apps, and smart contracts that enable secure, transparent, and decentralized financial transactions. This can reduce the need for intermediaries, decrease transaction costs, and enhance the speed and efficiency of financial processes. Additionally, Web 3.0 allows for the creation of new financial products and services that were previously impossible, such as decentralized exchanges, NFTs, peer-to-peer lending platforms, and decentralized autonomous organizations. These innovations could democratize access to financial services and provide new opportunities for individuals and businesses alike. However, Web 3.0 also poses challenges for regulators and financial institutions in terms of risk management, compliance, and adapting to new business models.

INTRODUCTION

Web 3.0 has led to several recent developments in the finance industry. One significant development is the emergence of decentralized finance (DeFi) platforms that enable users to access financial services without the need for intermediaries (Bohme et al., 2015). These platforms are built on blockchain technology and smart contracts and offer services such as lending, borrowing, and trading of digital assets. DeFi has grown rapidly in recent years, with the total value locked in DeFi protocols surpassing $100 billion in mid-2021 (DeFi Pulse). Another development is the use of non-fungible tokens (NFTs) in the finance industry. NFTs are unique digital assets that are stored on a blockchain and cannot be replicated.

They have been used in the art world to create digital art that can be bought and sold, but they are also being used in the finance industry to represent ownership of assets such as real estate, fine wines, and even tweets (Hagerty, 2021). Web 3.0 has also led to the development of decentralized exchanges (DEXs), which enable peer-to-peer trading of digital assets without the need for intermediaries (Changelly). DEXs use smart contracts to execute trades and are often more secure and transparent than traditional centralized exchanges. Overall, the impact of Web 3.0 on the finance industry has been significant, with the emergence of new business models, products, and services. However, there are also challenges to be addressed, such as regulatory compliance and risk management in these new decentralized financial systems (Böhme et al., 2015).

The Emergence of Decentralized Finance (DeFi): Advantages, Risks, and Challenges

Decentralized finance (DeFi) is an emerging area of the blockchain industry that leverages decentralized technology to offer traditional financial services. DeFi platforms use blockchain technology and smart contracts to create a transparent, secure, and decentralized system for lending, borrowing, and trading digital assets. These platforms remove intermediaries and offer a more efficient, cost-effective, and accessible way of accessing financial services compared to traditional finance

According to DeFi Pulse, the total value locked in DeFi protocols has surpassed $150 billion as of March 2023, a significant increase from $1 billion in June 2020 (DeFi Pulse, 2023). The growth of DeFi can be attributed to its ability to provide services such as lending, borrowing, and trading of digital assets without intermediaries, enabling more people to access financial services worldwide (Consensys, 2022).

The use of smart contracts is one of the most significant advantages of DeFi, as it ensures transactions are secure, and funds are locked until certain conditions are met (Swan, 2021). The transparency of DeFi platforms is also due to their open-source nature, which allows anyone to review the code, identify vulnerabilities, and suggest improvements (The Block, 2021).

Benefits of Smart Contracts

Smart contracts offer a fast, efficient, and accurate way to execute agreements. As soon as the conditions specified in the contract are met, the contract is automatically executed without the need for any human intervention. Unlike traditional contracts that require a lot of paperwork and manual processing, smart contracts are completely digital and automated. This eliminates the potential for errors that can arise from manual data entry, saving time and resources in the process. Overall, smart contracts provide a reliable and streamlined approach to executing agreements that can benefit various industries and use cases (IBM.com).

The use of blockchain technology in recording transactions ensures a high level of security due to the encryption of the records, making it extremely difficult for hackers to gain unauthorized access. Additionally, the records are linked to each other on a distributed ledger, so if a hacker attempts to modify one record, they would need to alter the entire chain, making it even more challenging to tamper with the records. (Kohli, A., Lekhi, P., & Hafez, G. A. A. (2023).

Smart contracts eliminate the need for intermediaries in facilitating transactions, which results in cost and time savings. By cutting out the middlemen, the transaction fees and delays associated with their involvement are removed, allowing for a more streamlined and efficient process (IBM.com).

Related Content

From Adoption to Routinization of B2B e-Commerce: Understanding Patterns across Europe
Tiago Oliveiraand Gurpreet Dhillon (2016). *Web Design and Development: Concepts, Methodologies, Tools, and Applications (pp. 1477-1497).*
www.irma-international.org/chapter/from-adoption-to-routinization-of-b2b-e-commerce/137408

A High-Capacity Covering Code for Voice-Over-IP Steganography
Hui Tian, Jie Qin, Yongfeng Huang, Xu An Wang, Jin Liu, Yonghong Chen, Tian Wangand Yiqiao Cai (2015). *International Journal of Information Technology and Web Engineering (pp. 46-63).*
www.irma-international.org/article/a-high-capacity-covering-code-for-voice-over-ip-steganography/145840

An Efficient and Accurate Discovery of Frequent Patterns Using Improved WARM to Handle Large Web Log Data
Sahaaya Arul Maryand M. Malarvizhi (2014). *International Journal of Information Technology and Web Engineering (pp. 47-64).*
www.irma-international.org/article/an-efficient-and-accurate-discovery-of-frequent-patterns-using-improved-warm-to-handle-large-web-log-data/115934

Customer Management Practices: Multiple Case Studies in Stock Broking Services
Gyaneshwar Singh Kushwahaand Shiv Ratan Agrawal (2016). *Web-Based Services: Concepts, Methodologies, Tools, and Applications (pp. 1712-1726).*
www.irma-international.org/chapter/customer-management-practices/140872

Engineering Conceptual Data Models from Domain Ontologies: A Critical Evaluation
Haya El-Ghalayini, Mohammed Odehand Richard McClatchey (2007). *International Journal of Information Technology and Web Engineering (pp. 57-70).*
www.irma-international.org/article/engineering-conceptual-data-models-domain/2624