Chapter 12
NFTs Enabling Ownership and Value in the Metaverse

Himanshu Sisodia

https://orcid.org/0009-0003-1550-0884

SSBM Geneva, Switzerland

ABSTRACT

Non-fungible tokens (NFTs) revolutionize digital property rights and the representation of value. NFTs provide various digital assets with transparency, immutability, and traceability by leveraging blockchain technology and smart contracts. NFTs represent tangible assets digitally, bridging the gap between the physical and digital worlds. Luxury brands such as BMW, Balenciaga, Dolce & Gabbana, Louis Vuitton, and Gucci use NFTs in the metaverse to facilitate distinct brand experiences and expression. NFTs authenticate digital identities and property in virtual environments, thereby promoting self-expression and social interactions. They establish a new economic paradigm, facilitating the exchange of value across domains and the preservation of intellectual property. Scalability, sustainability, and legal issues present themselves, necessitating solutions such as layer-2 scaling and copyright protection. It is essential for platforms, creators, and regulators to collaborate in order to establish standards and frameworks.

INTRODUCTION

Non-fungible tokens (NFTs) have arisen as a game-changing concept in the quickly growing digital ecosystem, redefining concepts of ownership and value. The core of NFTs is their capacity to create unique representations of ownership, which has far-reaching ramifications in the digital environment. NFTs, a term coined by Buterin in 2015, are digital assets that resist division and one-to-one exchange, distinguishing them from traditional currencies and even cryptocurrencies such as Bitcoin and Ethereum. NFTs, unlike interchangeable tokens, have essentially unique and irreplaceable characteristics, owing to the underpinning technology of blockchain (Idelberger & Mezey, 2022).

The fundamental basis of NFTs differs from that of traditional tokens such as Bitcoin and Ethereum, which are easily convertible. This unique feature of NFTs, which resulted from the union of blockchain technology and innovation, has led to their use as vehicles for reflecting ownership across diverse types

of digital material. NFTs have gained global interest, establishing themselves at the vanguard of digital ownership, from artworks and antiques to music, films, virtual real estate, and even digital identities. The value of any non-fungible token is determined by criteria such as scarcity, legitimacy, and demand for the underlying digital asset. To achieve complete transparency, immutability, and provenance, these tokens are typically built on blockchain networks that make use of smart contract features, such as Ethereum's ERC-721 and ERC-1155 standards (Buterin, 2015).

NFTs have quickly invaded the digital arena as a way of monetizing creative works, providing a transformative path for artists, musicians, innovators, and developers. Artists may now retain ownership rights, issue limited editions, and earn royalties via secondary sales, all thanks to the tokenization of their artworks as NFTs. This direct creator-to-consumer engagement has the potential to disrupt traditional art markets by giving artists a greater sense of power over their products (Buterin, 2015). The market for NFTs has seen an unparalleled parabolic rise, propelled by high-profile transactions and celebrity endorsements. The selling of artworks, virtual real estate, and antiques for exorbitant prices has unmistakably shown the perceived worth and financial potential of NFTs. As with any emerging technology, it is critical to recognize that the NFT market is still in its infancy and subject to the ebbs and flows of volatility (Idelberger & Mezei, 2022).

NFTs are fundamentally endowed with the notion of verifiability and ownership validation, which is a cornerstone of their relevance. Each NFT has a unique identity, information, and a cryptographic signature, resulting in convincing proof of authenticity and ownership, removing the threat of forgery and increasing confidence in the digital world. The decentralized nature of blockchain technology preserves the purity of NFT ownership records, making them impenetrable to manipulation and change and therefore reinforcing the concept of digital ownership (Buterin, 2015; Idelberger & Mezes, 2022).

In recent years, similar to the NFTs there has been a growing interest with the notion of the metaverse, a visionary world of immersive digital landscapes. The metaverse is essentially a seamlessly linked virtual reality (VR) or augmented reality (AR) expanse, an interconnected matrix of digital environments where real-time interactions and engagements with both digital entities and fellow persons flourish (Gilbert, 2022). This expansive view of the metaverse seeks to blur the lines between the digital and the physical, beginning on a mission to unite two allegedly separate realms.

Users travel and explore a myriad of virtual environments, engaging in social interactions, economic pursuits, and digital content consumption. The DNA of the metaverse is underpinned by a confluence of virtual reality, augmented reality, blockchain, artificial intelligence, and the Internet of Things, resulting in a digital tapestry interlaced with interconnectivity. It solidifies into a vast digital vista that resembles the rich fabric of the actual world (Gilbert, 2022).

The celebration of user agency and customization, a symphony of individual invention, is central to the metaverse's fabric. Users have the ability to create and personalize their virtual identities, known colloquially as avatars, as well as the worlds they occupy. This customization extends to virtual goods like as digital art, clothing, accessories, and even virtual real estate, all of which serve as an embodiment of self-expression in a digital environment (Gilbert, 2022; Lanier, 2011).

The metaverse develops as a fertile field for economic aspirations and opportunities, coordinating a wide range of commercial enterprises. The metaverse acts as a marketplace for virtual goods, virtual services, immersive events, and one-of-a-kind digital experiences. It also provides a platform for content producers, artists, and entrepreneurs to sell their digital assets, therefore contributing to the metaverse's expanding ecosystem (Lanier, 2011; Gilbert, 2022). However, in its infancy, the metaverse's developing story necessitates attention. Its technological underpinnings, standards, and interoperability are constantly

24 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/nfts-enabling-ownership-and-value-in-the-metaverse/329864

Related Content

Demystifying Big Data in the Cloud: Enhancing Privacy and Security Using Data Mining Techniques
Gebeyehu Belay Gebremeskel, Yi Chaiand Zhongshi He (2016). *Web-Based Services: Concepts, Methodologies, Tools, and Applications (pp. 2001-2031).*
www.irma-international.org/chapter/demystifying-big-data-in-the-cloud/140886

Implementation of a Web Application and GIS Electronic Atlas for Teaching in Open Education
Saule Kairollovna Damekova, Lyubov Nikolaevna Karassyova, Nurlan Amirovich Medetov, Zamzagul Manapovna Ozhibayevaand Bozhidar Tsvetkov (2023). *International Journal of Information Technology and Web Engineering (pp. 1-23).*
www.irma-international.org/article/implementation-of-a-web-application-and-gis-electronic-atlas-for-teaching-in-open-education/329971

Integration of Libre Software Applications to Create a Collaborative Work Platform for Researchers at GET
Olivier Berger, Christian Bacand Benoît Hame (2006). *International Journal of Information Technology and Web Engineering (pp. 1-16).*
www.irma-international.org/article/integration-libre-software-applications-create/2609

Reliability and Scalability of Service Oriented Architecture in Web Services: Signature Verification
Madana Kumar Reddy C (2016). *Design Solutions for Improving Website Quality and Effectiveness (pp. 342-356).*
www.irma-international.org/chapter/reliability-and-scalability-of-service-oriented-architecture-in-web-services/143383

FaD-CODS Fake News Detection on COVID-19 Using Description Logics and Semantic Reasoning
Kartik Goel, Charu Gupta, Ria Rawal, Prateek Agrawaland Vishu Madaan (2021). *International Journal of Information Technology and Web Engineering (pp. 1-20).*
www.irma-international.org/article/fad-cods-fake-news-detection-on-covid-19-using-description-logics-and-semantic-reasoning/283076