


Chapter 7

NFTs: Transforming Digital Ownership in the Web 3 Era

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ABSTRACT

This chapter delves into the revolutionary landscape of non-fungible tokens (NFTs) and their profound impact on reshaping digital ownership within the framework of Web 3 technologies. NFTs have emerged as a unique form of digital asset, utilizing blockchain technology to certify and authenticate ownership of digital content, be it art, music, virtual real estate, or other digital assets. The chapter provides a comprehensive exploration of the underlying technology that powers NFTs, elucidating the role of smart contracts and decentralized ledgers in ensuring the scarcity and provenance of these digital assets. The chapter further delves into the economic and cultural implications of the NFT phenomenon, examining the way in which these tokens have disrupted traditional models of intellectual property and content monetization. It explores the democratizing potential of NFTs, allowing creators to directly engage with their audiences and enabling new forms of digital expression.

1. INTRODUCTION

In the era of Web3, characterized by a focus on decentralization, the emergence of Non-Fungible Tokens (NFTs) has become a significant catalyst for change. These tokens facilitate the ownership of digital assets in a manner that is distinct, verifiable, and indivisible. The chapter explores the complexities of blockchain technology, smart contracts, and tokenization to elucidate the decentralized framework offered by NFTs for the verification and exchange of digital material (Zohar, 2015). The discourse delves into the varied uses of NFTs, encompassing domains such as art, collectibles, digital real estate, and more. It highlights the significance of NFTs in transforming the online realm, facilitating novel economic frameworks, and empowering both artists and users within the decentralized environment. Figure 1 demonstrates the examples of fungible and non-fungible tokens. Each NFT possesses a distinct functionality

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or characteristic that cannot be compared to other NFTs. NFTs are tokens that serve as representations of digital art, real estate, or valuable gemstones such as diamonds.

Figure 1. Examples of fungible and non-fungible tokens

Fungible	Non-Fungible
Dollar 	Cryptokitties 
Bitcoin 	Art 
Ethereum 	House/Property 

By employing astute analyses and concrete illustrations, the chapter elucidates the capacity of NFTs to act as agents of transformative change in our understanding, valuation, and transaction of digital assets within the dynamic domain of Web3 technologies.

1.1 Definition of NFTs

NFTs embody distinctive digital assets that possess the qualities of indivisibility, distinctiveness, and distinguishability from one another within the context of a blockchain ecosystem. In contrast to fungible crypto-currencies like Bitcoin or Ethereum, NFTs include a unique identifier, rendering them irreplaceable and distinctive, hence precluding one-to-one exchangeability. NFTs utilize blockchain technology, commonly adhering to established protocols such as ERC-721 or ERC-1155, to guarantee the verifiable ownership, authenticity, and provenance of digital assets. These assets encompass a wide range of digital content, including but not limited to digital art, collectibles, virtual real estate, and in-game items. Brief differences between the fungible and non-fungible tokens are shared in Table 1.

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