

insights on CONTENT

MAKING SENSE OF THE DIGITAL MAZE



NFTs: A NEW APPROACH TO DIGITAL CONTENT

LARISSA PACK

In April 2021, CNBC reported that the value of the cryptocurrency market hit \$2 trillion. Whether it is Bitcoin, Ethereum, or something new, cryptocurrency is an ever-growing, decentralized financial movement that has attracted the attention of millions of investors around the world. In recent months, the rise of cryptocurrency has brought forward a method of storing and selling digital content: non-fungible tokens (NFTs).

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The idea of NFTs was first explored by Bitcoin in 2012 through Colored Coins, which were small amounts of Bitcoin representing a variety of items. NFT usage continued to grow in popularity through the trading of different digital art pieces, such as CryptoPunks (unique, collectible digital characters) and CryptoKitties (collectible digital cats users can “breed” with others to unlock various traits). However, in early 2021, NFTs began to turn heads when a digital art collection created by Beeple sold for almost \$70 million. NFTs have now been used and sold by a wide variety of well-known celebrity entities, such as the NBA, the band Kings of Leon, and actress Mila Kunis.

NFT 101: THE BASICS OF BLOCKCHAINS

NFTs are distinct digital assets. Similar to a print of an original painting, an NFT is a certified copy of an original creation that is different from all other copies (both certified and uncertified) of that creation. The creation can be any form of digital content, and it can even contain access to physical content. For example, when Kings of Leon released its latest album as an NFT, the owner of the NFT was guaranteed front-row seats to a show for every headline tour for life.

An NFT is developed by using blockchains, which create and maintain transactions within cryptocurrencies. A blockchain is a database that serves as a ledger for digital transactions. When an NFT is made or a transaction occurs, a block will eventually need to be added to the pre-existing chain of transactions. The method used to add this block to the chain differs. For example, when adding an NFT to the Ethereum blockchain, a smart contract (which is code) is initially added to the blockchain that contains a set of actions and certain conditions to meet. Once the conditions are met, the action takes place (such as providing

a digital file to a buyer), and the blockchain is updated with this transaction.

While both NFTs and cryptocurrencies use the same blockchain technology, they differ in their attributes. A cryptocurrency uses fungible tokens, meaning that every token is exactly the same; this allows all pieces of one type of cryptocurrency (such as Bitcoin or Ethereum) to represent the same amount of value. However, NFTs are unique. If a person were to receive two NFTs, they would not represent the same piece of digital content, even if they were both exact copies of the same digital file.

WHAT AN NFT BRINGS TO THE DIGITAL TABLE

Using NFTs offers many possibilities for digital content. Before NFTs, digital content creators could not have a truly original file; any digital file that a person created could be copied endlessly without any indication of which file was the original. There was also no way to track the history of these files as they were given to others. With NFTs, a copy can be verified with the use of a unique identifier included in the NFT, and the history of ownership for that copy can be maintained.

NFTs provide certain advantages to content creators depending on the platform they are created on. With NFTs in Ethereum, the smart contract is automatic: The code in the smart contract cannot be changed once it's added to the blockchain, and the transaction cannot be changed once the criteria have been met and verified. This provides security to both creators and buyers. Most websites where NFTs are sold also allow content creators to add a royalty system to the subsequent selling of their content. For example, a digital artist could say that every time their piece is sold to a new owner, the artist receives 10% of the selling price.



THE DOWNSIDES OF AN NFT

There are several disadvantages to using NFTs. Those who own an NFT do not necessarily own the original version of the digital content. Accessibility to NFTs can be a significant barrier. While NFT marketplaces are user-friendly, content creators must pay fees for the creation and upkeep of the NFT. These fees are usually required to be paid with a cryptocurrency in a digital wallet. The NFT marketplaces are also only popular for certain types of digital content; currently, for example, there are very few writers who sell their work as NFTs.

*For now, **NFTs have not been widely applied to digital content in the library space.***

Another pain point of using NFTs is the effect the cryptocurrency industry has on the environment. The current mining practices for the most popular cryptocurrencies use proof-of-work techniques, which require a vast amount of energy from powerful computers. Ethereum stated in July 2021 that it is moving away from the proof-of-work system into proof-of-stake, which is a much more energy-efficient approach. Since NFTs are based in blockchain technology and use cryptocurrency for upkeep, this inefficiency provides a significant dilemma to the widespread use of NFTs until changes are made.

LINKS TO THE SOURCE

"Cryptocurrency Market Value Tops \$2 Trillion for the First Time as Ethereum Hits Record High"
[cnbc.com/2021/04/06/cryptocurrency-market-cap-tops-2-trillion-for-the-first-time.html](https://www.cnbc.com/2021/04/06/cryptocurrency-market-cap-tops-2-trillion-for-the-first-time.html)

"How Beeple Crashed the Art World"
[newyorker.com/tech/annals-of-technology/how-beeple-crashed-the-art-world](https://www.nytimes.com/2021/03/11/technology/how-beeple-crashed-the-art-world)

Ethereum's definition of NFTs
ethereum.org/en/nft

Ethereum's proof-of-work announcement
ethereum.org/en/eth2/merge

"Blockchain and the Future of Libraries: An Interview With Sandra Hirsh and Susan Alman"
ala.org/tools/article/future-libraries/blockchain-and-future-libraries-interview-sandra-hirsh-and-susan-alman

EXAMPLES OF NFT MARKETPLACES

The following are some non-fungible token (NFT) marketplaces I discovered while writing this article. Axie Infinity, Wilder World, and Decentraland are better described as interactive marketplaces, similar to video games. The other marketplaces function more like Amazon or other ecommerce websites. A word of caution: Some of these sites feature content that is definitely NSFW.

—L.P.

Axie Infinity
axieinfinity.com

OpenSea
opensea.io

Decentraland
decentraland.org

Rarible
rarible.com

MakersPlace
makersplace.com

SuperRare
superrare.com

Mintable
mintable.app

Wilder World
info.wilderworld.com

NBA Top Shot
nbatopshot.com

WHAT AN NFT BRINGS TO THE LIBRARY TABLE

For now, NFTs have not been widely applied to digital content in the library space. However, as part of its Library of the Future initiative, ALA recently discussed the potential use cases for the blockchain technology vital to NFTs, including providing full access to digital content for those who cannot obtain a library card. The use of NFTs also presents a new layer to the issue of ownership when discussing subscriptions to digital content. If NFTs break into the writing or publishing space, then it is possible that the unique identifiers within an NFT could determine ownership, similar to physical publishing practices. The interest in NFT usage may wane in the future if it's discovered not to be useful in library spaces, but for now, the discussion around NFTs as a new technology to leverage is not going anywhere.



LARISSA PACK is a freelance science and medical writer. She gained experience in both the biotechnology field and academia while working on her graduate degree in bioengineering. Her email address is Impack01@outlook.com. Send your comments about this article to itletters@infotoday.com or tweet us (@ITINewsBreaks).

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