

A guide to NFTs: What are they, and why did someone spend \$69 million for one?

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Last week, the auction house Christie's announced the artist Beeple sold a piece of artwork for more than \$69 million, the third highest price for a living artist.

But "Everydays: The First 5000 Days" isn't a physical work of art. It's all digital.

The work was sold through an NFT, a burgeoning technology that could potentially change how we own everything from art work and concert tickets to our homes.

The mind-boggling dollar figures behind the sale have helped bring attention to NFTs, along with support from bigger names. NBA Top Shot, for example, is a digital collectibles service that allows fans to collect and own digital highlights from NBA games, like a LeBron James dunk.

Meanwhile, Kansas City Chiefs quarterback Patrick Mahomes launched his own digital art gallery using NFTs. Then there's Tesla CEO Elon Musk, who is selling a recent tweet as an NFT.

Here's everything you need to know about the digital platform:

What does NFT stand for?

It's short for non-fungible token. Fungible items are easily interchangeable. Take money as an example. If we each have a \$20 bill, we could swap them without any change to their value. In the case of a non-fungible token, each one is unique and cannot be directly exchanged for another.

So what exactly is an NFT?

An NFT is essentially a piece of data that verifies you maintain ownership of a digital item, from a piece of artwork to a clip of a game-winning shot in an NBA game, a tweet and even the sound of a fart, according to a report in the New York Post.

"The norm right now is people create these limited edition tokens where there is only one of that token," said Chris Wilmer, an associate professor at the University of Pittsburgh Swanson School of Engineering and co-managing editor of "Ledger," a peer-reviewed journal for research on cryptocurrency and [blockchain](#) technology. "They will associate a piece of their art with one of these tradable tokens, and they say there is only ever going to be one."

In a statement to U.S. TODAY, Christie's said the \$69 million art work recently auctioned off was transferred to the buyer's digital wallet.

Wilmer said when NFT artwork is purchased, for example, the buyer receives a link that takes them to the digital piece of art.

The NFTs are created and recorded using blockchain technology.

Back up: What's blockchain?

A blockchain is a digital decentralized ledger tracking transactions of items or assets such as bitcoin or NFTs, says PwC. Instead of a central administrator or company monitoring the transactions, they're completed through a peer-to-

peer network of computers out in the open. In the case of bitcoin, for example, you can explore the data at any time for transactions.

When a transaction is completed, it is recorded and grouped into a block, with information such as time stamps and amounts. When enough blocks are grouped together, they form a chain chronicling every transaction linked to that asset. Because the logging of transactions such as NFTs is not happening in a central location, the transactions would be difficult for a hacker to breach.

Wilmer compares blockchain to a cloud storage database. "One kind of data they can store is who owns certain internet points like bitcoin, but they can also use them to store other types of data like ownership of artwork," he said.

What's the benefit of NFTs or blockchain?

For the artist, it's another avenue for making money. For example, the band Kings of Leon is releasing their new album as an NFT. Some artists can also earn royalties any time an NFT featuring their work is resold, according to Ethereum, a popular blockchain.

"What gives them value is their scarcity," says David Sacco, a finance and economics professor at the University of New Haven.

Sacco says another benefit to relying on blockchain technology is the security. According to a 2017 post by IBM, records kept on a blockchain are typically secured with a private digital key to prevent tampering.

Wilmer says because, again, there is no central administrator, the data in blockchains like bitcoin can't be altered once recorded.

Any concerns with using NFTs?

That password or private key is critical. In January, The New York Times reported millionaires who were locked out of their bitcoin fortunes because they lost the passwords necessary to gain access. Unlike your email or other online account, there's no option to retrieve a forgotten password.

The same can happen with NFTs, says Wilmer. "You're going to have a secret password, a private key associated with the ownership of that," he said. "If you lose that or if someone gains access to it, someone can steal your \$70 million artwork and then trade it without your permission."

How prone are blockchains to hacking? Wilmer says "once a block is underneath several other blocks, it is essentially permanent data storage and those are the records that have never been tampered with" since the inception of bitcoin or Ethereum.

How big a deal is it?

One potential future use for NFTs, says Wilmer, is the ability to use them to track land titles, with a token representing ownership of property like a home.

"People for many years now have been talking about using blockchains to replace the archaic paper-based land deed systems that most of the world uses," he said.

Bitcoin has slowly seen adoption by mainstream groups and companies including Tesla, which confirmed in a filing with the Securities and Exchange Commission plan to accept bitcoin as a form of payment in the future.

Sacco expects the same for the tokens. "I think ultimately the NFTs and blockchain technology are going to become the way that people store records digitally because of the security associated with it," said Sacco.

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