

Introduction to NFTs

NFTs, or non-fungible tokens, are now the hottest digital assets recorded and transferred on a blockchain. They are so hot that the *Collins Dictionary* named “NFT” its 2021 word of the year. Compared to a year ago, purchases of NFTs are up 11,000%, with final 2021 numbers not available yet.

The explosive interest in NFTs “demonstrates a ‘unique technicolour collision of art, technology and commerce’ that has ‘broken through the Covid noise’ to become ubiquitous” (Alison Flood, “[NFT Beats Cheugy to be Collins Dictionary’s Word of the Year](#),” November 24, 2021). Take for example the widely reported March 2021 auction of an NFT that consisted of 5,000 individual pieces of digital art created by the artist known as Beeple. It sold for more than US\$69.3 million.

The first NFTs were reported to have been sold in 2014 (Andrew Steinwold, “What is a Non-fungible Token (NFT)?” October 7, 2019, Medium), but the NFT market did not really begin to take off until late 2017 when CryptoKitties NFTs “congested the Ethereum network” (Joon Ian Wong, “[The Ethereum network is getting jammed up because people are rushing to buy cartoon cats on its blockchain](#),” Quartz, December 4, 2017). For the next two years, CryptoKitties were basically the only popular NFTs.

But in July 2020, the NFT market started growing. Approximately \$500 million were spent on NFTs in 2020, according to [NonFungible.com](#), a website that tracks the NFT market. In the first quarter of 2021, NFT sales grew to over \$2 billion (Robin Barber, NFT Statistics, Facts & Trends in 2021, Cloudwards, June 29, 2021). In the period from November 1, 2020, to November 1, 2021, 5.5 million NFT sales valued at \$9.4 billion were reported—again according to NonFungible.com—with 3.1 million “primary market”

transactions (that is, transactions representing the first time a given NFT was sold) and 2.4 million "secondary market" transactions (all subsequent sales of an NFT after its initial sale). Over that same time period, the NFT art market grew over 800% (www.businessinsider.com.au/nft-art-market).

Like its dramatic growth, the NFT market has experienced dramatic swings. Some months have huge sales and other months do not. In May 2021, for example, the aggregate value of NFTs sold was less than half of those that had been sold the prior month (Market Insider May 18, 2021).

Interestingly, creators of NFTs are adding physical goods as well as virtual goods and services to their NFT offerings. The tax and regulatory issues with respect to those types of products can be very complex, and such NFTs are beyond the scope of this article.

CHARACTERISTICS OF NFTS

What's an NFT?

Each NFT is a unique digitized certificate (referred to as a token) that is a digital unit of data stored on a blockchain. It can be a representation of something (a work of art, a photograph, a piece of music, a game or a collectible), or it can be an original creation that exists only in digital form. NFTs are typically purchased and sold using the type of cryptocurrency or digital token (collectively referred to as tokens) used or accepted on that particular blockchain. Initially, NFTs were almost exclusively created on the ethereum blockchain and purchased with ether tokens (ETH). (Ether is the native token of the ethereum blockchain, which has functionality for smart contracts. ETH "acts as the primary 'fuel' that powers all activity on [the ethereum blockchain]" ("[About Ethereum](#)," CoinDesk)).

More recently, additional blockchains are being created to implement NFTs

that are native to those blockchains (T.W. Lounge, "Choosing the Right Blockchain for Your NFT, Medium, 2020).

Once an NFT is created on a blockchain, all of its subsequent sales are tracked and recorded. Each token's metadata allows such tracking because it contains information as to ownership and all other terms and conditions applicable to that token. Each token is non-fungible because its metadata cannot be duplicated or replicated. In other words, one NFT is not interchangeable with another NFT or with any other asset. Even if multiple replicas are created using the same content, each NFT has unique metadata. Once an NFT is recorded on a blockchain, its provenance can be tracked, indicating "who owns, previously owned, and created the NFT, as well as which of the many copies is the original" (Matthieu Nadini et. al., "Mapping the NFT Revolution: Market Trends, Trade Networks, and Visual Features, Scientific Reports, Vol. 11, 20902 (2021)).

An NFT cannot be divided into smaller units or used in the same way as fungible convertible cryptocurrency such as bitcoin (BTC) or ETH. (Convertible cryptocurrency has an equivalent value in real currency or acts as a substitute for real currency. In this article, the term cryptocurrency is used for "virtual currency," "tokens" and "digital assets.") One NFT cannot be exchanged for another, and an NFT's value, if any, is based solely on what someone is willing to pay the seller to buy it.

NFTs are marketed through online marketplaces, including the popular OpenSea as well as Nifty Gateway, Rarible, SuperRare and MakersPlace. Scott Nover reported recently, "Of the \$2.8 billion spent on NFT marketplaces in September [2021], \$2.72 billion changed hands on OpenSea, according to data from the crypto websites Dapp Radar and CryptoArt, compiled by the The Blck." On October 12, 2021, Coinbase announced that it is creating its own NFT marketplace. ("What Coinbase's

Entry into the NFT Market Means for OpenSea," Quartz, October 14, 2021). All NFT platforms host blockchain technology. Although OpenSea provides a general marketplace, many of the other NFT marketplaces are more specialized and cater to particular types of NFT, such as sports, visual arts or games.

An NFT participant needs a crypto wallet, such as MetaMask, to connect to the NFT platform. Once the participant has a crypto wallet, she or he can transfer the type of token needed to buy the NFT and can hold NFTs in the wallet. Popular tokens used to purchase NFTs include ETH, dai (DAI) and solana (SOL). Dai is a decentralized stablecoin that runs on the ethereum blockchain and which attempts to maintain a value of USD \$1.00. Unlike centralized stablecoins, Dai is backed by collateral on the maker platform. ("Dai (DAI) Price, Charts, and News," Coinbase.) Sol is the token that is the "gas" that pays for transactions on the Solana decentralized computing platform. ("Solana Price (SOL)" price charts, Coinbase.) "Gas" refers to the amount of a token that is needed to perform a certain function on the blockchain network. NFTs are typically sold at auction (both online auctions and more recently through traditional auction houses), at a fixed price, or through a declining price listing.

Smart Contracts

As a "smart contract," each NFT's embedded metadata allows relevant information to be visible and stored on the blockchain in a transparent and immutable way. The metadata verifies ownership, transferability (and if so, under what circumstances), links to other digital assets, license fees, royalties and any other payment obligations. Upon transfer, an NFT's metadata assures that required payments are accepted and confirmed, the correct payment amount is transferred to the seller, and any license fee or royalty amount is deducted from the payment made to the seller and

transferred to the NFT's creator or the owner of the intellectual property.

Intellectual Property Rights

Many legal and regulatory issues are currently unanswered with respect to NFTs. With that said, a number of open questions "touch on copyrights, intellectual property rights, ownership of tokens vs. ownership of the content, and authentication." Given the current lack of regulatory guidance, NFTs are "vulnerable to copyright theft, unauthorized replication and fraud, and storage failure," as well as "protocol risks like hacking, platform risks related to governance, and high gas fees stemming from the Ethereum network." (Matthew Fox, "The NFT Market is Now Worth More than \$7 billion, But legal Issues Facing the Nascent Sector Could Hinder Its Growth, JP Morgan Says," Business Insider, November 19, 2021.)

Because NFT purchasers only receive the rights granted to them as noted in the NFT metadata, creators can—and often do—retain their ownership of the content that underlies an NFT. The artist Beeple, for example, retained his copyright to the art underlying the NFT mentioned at the start of this article. As a result, Beeple can create and sell countless other NFTs and other types of artwork from the same content.

HOW ARE NFTs TAXED?

At the date of this writing, there is no specific guidance from the US government as to how NFTs are taxed. Indeed, NFTs are not mentioned in any of the IRS's cryptocurrency tax pronouncements. Therefore, one must look to general tax principles to determine, by analogy, how NFTs are likely to be taxed.

The first point of reference is Notice 2014-21 (2014-16 I.R.B. 938) and the 2019 Frequently Asked Questions (FAQs) which were the IRS's first attempts

to address *convertible* cryptocurrency taxation (IRS, "Frequently Asked Questions, 2019," most recently updated March 2021). Convertible cryptocurrency has an equivalent value in real currency, can be purchased for or exchanged into real currency, and can be used to buy goods and services. For example, BTC and ETH are convertible cryptocurrencies. The IRS treats convertible cryptocurrency as property, not currency. As a result, the general tax principles that apply to property transactions apply to convertible virtual currency. Although Notice 2014-21 does not address non-convertible cryptocurrencies or NFTs, it is likely that many other cryptocurrencies and tokens are property for tax purposes.

Because NFTs are property, not real currency, such transactions are taxed as barter transactions. Both the NFT buyer and an NFT seller^{3/4}not just the seller ^{3/4}have a taxable transaction when the buyer pays for an NFT with "property" such as cryptocurrency or a digital token. (Gain would be taxable if the fair market value of the cryptocurrency used to buy the NFT is greater than the taxpayer's tax basis in that cryptocurrency.) The seller has taxable gain (or loss) equal to the difference between the seller's tax basis and the value of the property received in payment for the NFT. (Losses are not deductible in certain situations. If the NFT is a personal transaction, loss on disposing of it might not be deductible.)

If, on the other hand, the NFT is purchased with actual currency such as US dollars, the seller has a taxable sale but the buyer does not. The seller's gain (loss) is the difference between the NFT's adjusted tax basis and the amount of currency used to purchase it. If the buyer uses appreciated property to buy the NFT (that is, the fair market value in the property used to buy the NFT is greater than the buyer's tax basis), the buyer has taxable gain equal to the amount of this appreciation. The buyer's tax basis in that property is what is relevant for tax purposes.

Gain or loss is treated as capital or ordinary, depending on whether the taxpayer is an investor or trader (capital), or a creator or dealer (ordinary). Ordinary losses are fully deductible; capital losses are subject to the special loss limitations that apply to capital assets. As a result, some capital losses might not be deductible. In addition, if the taxpayer holds an NFT as a personal asset, not for investment (or as part of a trade or business), losses can be permanently denied under rules that prohibit deductions for losses incurred on activities that are not engaged in for profit (Code § 183).

[Read the next article in the series: Taxation of NFT Creators](#)