

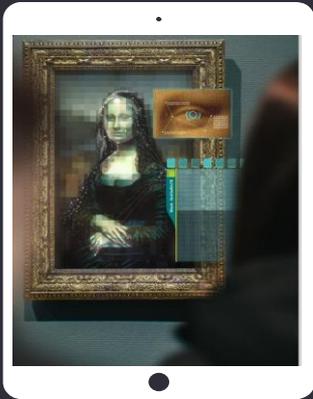


Non-fungible tokens (NFTs) in the spotlight

A closer look behind the NFT hype and what
or which rights are really being acquired
from a Swiss perspective.

July 2021

Revolution of art or art of marketing?



3, 2, 1 and sold - but what?

Great attention was paid to the auction of perhaps the most famous NFT of the present day by digital artist Mike Winkelmann, better known as "Beeple", whose work "EVERYDAYS: The First 5000 Days" sold at Christie's for a record-breaking USD 69.3 Mio.

The acronym "NFT" stands for "non-fungible tokens" and these are basically digital assets with unique identification codes and metadata recorded in a blockchain ledger representing the ownership and authenticity of an associated unique tangible or intangible asset.

As the name suggests, NFTs are characterized by their **non-fungible** nature. In economic terms, fungibility is the ability of an asset to be exchanged with other individual assets of the same type for the purpose of transacting value. Correspondingly, fungible assets in the same denomination imply the same value and include, for example, gold, a specific security or currency in FIAT/ crypto. Conversely, this means, that NFTs are, by definition, **not interchangeable, irreplaceable and unique**.

The concept behind NFTs is to create a certain scarcity and shortage in the flood of the seemingly infinite supply of virtual items. Accordingly, NFTs bring the promise of creating a "digital original" that is one of a kind and can be clearly attributed to the respective owner. The resulting opportunities are currently being hyped up, especially in the digital art industry: While in the "real world" there is always a unique original of a work, such as the painting that the artist created with his or her own hands, in the digital world there has so far been no counterpart in the sense of a "digital original".

The non-manipulative nature of NFTs enables both real and digital art objects to have verifiable scarcity and original ownership. For artists, this is a way to combat plagiarism as well as monetize their business. NFTs also allow collectors to value digital art in a similar way to physical art, creating thus new opportunities for digital artists.

It is therefore not surprising that it was initially the digital art market where NFTs became a mainstream phenomenon: Both *CryptoPunks*, with its algorithmically generated unique digital artworks limited to 10'000, and *CryptoKitties*, a blockchain-based virtual game that allows players to adopt, raise and trade virtual cats, were launched in 2017 and have since been recited as milestone projects in the NFT space. The biggest marketplaces for NFTs include *OpenSea*, *Rarible* and *Mintable*.

4,2 k



For 4'200 ETH or about USD 7.57 Mio, the most expensive CryptoPunk #7804 was bought on 11 March 2021

Source: larvalabs.com/cryptopunks;
Retrieved on June 22, 2021

16 Mio



Reportedly the largest NFT marketplace, *OpenSea* offers over 16 Mio items, from art to virtual reality to sports and trading cards.

Source: opensea.io/assets
Retrieved on June 22, 2021

338 Mio



The market capitalization of NFTs is estimated at USD 338 Mio by 2020, with a CAGR of over 187% in 2018-2020

Source: tradingplatforms.com
Retrieved on June 22, 2021

The technical backstage - How does an NFT work?

The technology behind the artwork and hype: The technical composition of NFTs builds on the buzzword technologies DLT, Blockchain and smart contracts.

DLT/ Blockchain

The creation of NFT requires an underlying distributed ledger for records, together with exchangeable transactions for peer-to-peer network trading. While most NFTs to date have been built on Ethereum today some newer NFTs also use other blockchains such as Flow, Hyperledger or Fast Box for specialized application support. The popular blockchain systems employ hex values according to which the raw NFT data must be encoded.



Smart Contracts

NFT solutions generally are leveraging smart contracts for order-sensitive executions. For the transfer of NFTs, the owner has to sign the transaction, including the hash of NFT data, and then sends the transaction to a smart contract. Upon receipt of the transaction by the smart contract with the NFT data, the minting and trading process will be initiated. When the transaction is confirmed, NFTs will be permanently linked to a unique blockchain address.



Token Standards

The most commonly used token standards for generating NFTs are at present the Ethereum ERC-721 and ERC-1155 token standards, which allow lines of code to be developed to create unique tokens representing underlying assets.

Storing of NFTs: An NFT owner stores the raw data in an external database outside the blockchain. However, the owner may also store the raw data inside a blockchain.



Can you copy NFTs? With the caveat of existing IP rights, anyone can theoretically copy a digital file as many times as they want, including the art contained in an NFT. However, NFTs are designed to offer something that is protected from replication: ownership of the work. Essentially, the owner of an NFT owns the original piece of hex values signed by the creator. While other individuals may freely copy the raw data, but they cannot claim ownership.

Technical Challenges



Sustainability: Minting NFTs on a large scale requires uploading the metadata to the blockchain network, which leads to high energy consumption. Each NFT-related transaction is more expensive than a simple wire transfer transaction. To complete a simple NFT trade, each transaction can cost between USD 60 and 100.

Speed of confirmation: Current NFT systems are tightly coupled with their underlying blockchain platforms. This technical design leads to usability challenges in the form of low performance and extremely slow confirmation of NFTs transactions.

Non-accessibility of NFT data: In many NFT projects, a cryptographic "hash" identifier is tokenized and then recorded in the blockchain. Accordingly, the original file could be lost or corrupted, resulting in potential trust concerns.

Anonymity: Most NFT transactions rely on the Ethereum platform, which does not offer strict anonymity or privacy but only pseudo-anonymity. Existing privacy solutions (e.g. zero-knowledge proof) have not yet been applied to NFT-related schemes.

Interoperability: Interoperability and cross-chain communication between existing NFT ecosystems is currently only possible with the engagement of external solution providers.

Upgradability: Difficulties may arise in properly updating the blockchain system and the associated NFT schemes.

More than just art - The palette of NFT use cases

The playground of NFT applications extends over many more possible fields of application. Providing the uniqueness of the underlying asset, almost anything can be represented by an NFT - real art works, real property titles, houses, cars, bottles of wine, as well as digital assets such as images, documents, videos, and tweets.



Real Estate

NFTs of real estate can accelerate the transfer of ownership, recorded and easily verifiable on the blockchain, by using smart contracts. NFTs can also enable fractional ownership of real estate, allowing owners to unlock the value of previously illiquid assets and raise funds.



Music and Film

Smart contract technology allows musicians and film makers to transfer the copyrights of their works to NFTs so that they automatically receive royalties when their work is (dis)played. Artists can accordingly receive their fair share of profits for their work.



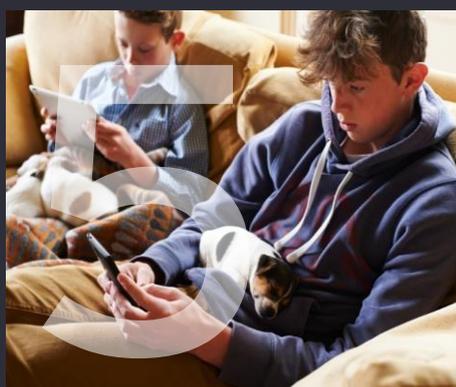
Consumer Goods

Tokenizing physical consumer goods such as wine bottles, jewelry or pharmaceuticals that are part of a standardized supply chain from the manufacturer or producer to the consumer enables real-time tracking of products and empowers the manufacturer to identify potential fraudulent use.



Licenses and Certifications

NFT use cases can also be of great use in verifying licenses and certifications for course completions, e.g. for and on behalf of universities and employers. Furthermore, admins can save a lot of time by accessing such licenses with the functionalities of NFTs.



Gaming

In gaming ecosystems, players may be encouraged to unlock special accessories for their characters or other in-game items. The NFT qualities of rarity and immutability make it possible for players to verify the history, authenticity and origin of their in-game items.



Financial Industry Compliance

Finally, NFT solutions are also conceivable in regulatory compliance in the context of customer due diligence and know-your-customer verification. Accordingly, NFTs may be a method for the financial industry to store information in a secure and tamper-proof way.

Legal challenges – watch out for the kitties in the wallet

But watch out for the cat in the sack or the kitties in the wallet - what exactly do NFT holders acquire? Ownership of the original work, its digital representation or both? Also, attention should be paid to potential legal pitfalls in the context of NFT.

Intellectual Property Laws

In terms of IP rights, ownership of the underlying rights is only transferred if the author of the original work expressly agrees to transfer those rights to the NFT owner in a specific agreement. Without such an agreement, ownership of an NFT generally will not transfer ownership of the underlying content or the IP rights associated with it. As a result, an NFT owner may not be permitted to reproduce, distribute, publicly perform, display or create derivative works from copies of the original work. Therefore, an issuer of NFT must develop a clear IP strategy and decide what is being sold, which rights are to be granted to holders of the NFT and which rights the issuer, the artist and secondary market platforms may need to keep.

Licensing Laws

The distribution of NFT licenses and royalties may solve the existing IP issues. Such an approach ensures that the distinction between the acquisition of such IP rights and the right of use is clarified.

Contract Laws

Both NFT issuers as well as secondary marketplaces need to put appropriate terms of sale in place. These serve to protecting their business interests and include e.g. provisions addressing warranties, IP rights, liability, applicable law and dispute resolution mechanisms.

Regularly, additional legal documents are advisable such as code of conducts or data privacy policies.

Cross-border Laws

Heterogeneous regulations at national and supranational level may prove to be a challenge, also with regard to the numerous different fields of laws affected. For example, in countries such as India and China, the legal framework for cryptocurrencies and NFT sales is very restrictive.

Data Protection Laws

Possible data breaches in the NFT context arise in particular with regard to the right to erasure of their personal data and the right to rectify inaccuracies in their personal data, given the functionally immutable nature of the blockchain.

Tax Laws

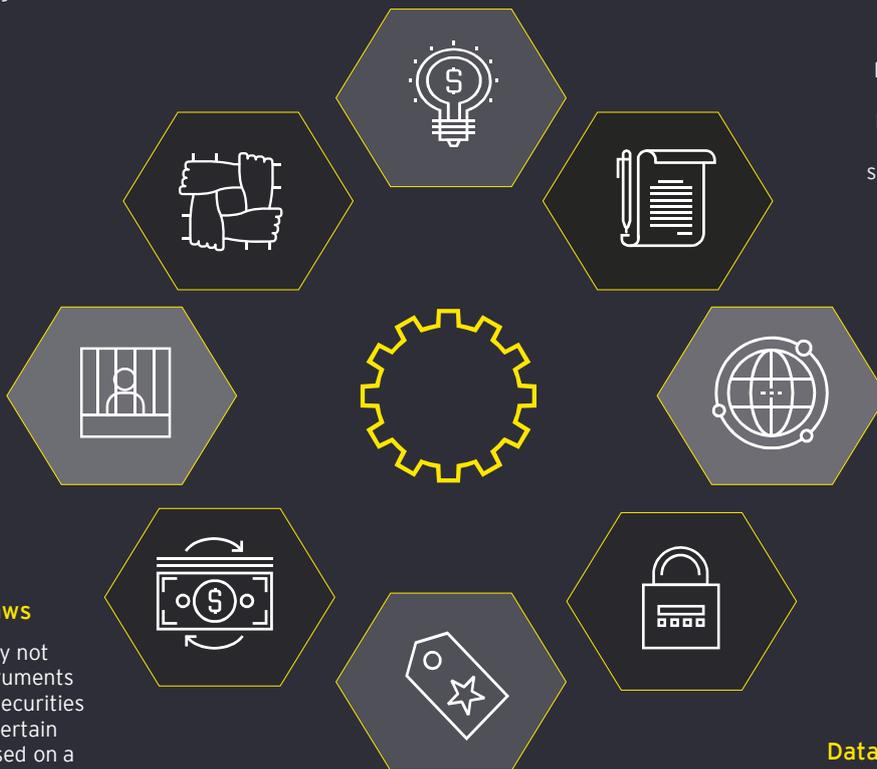
Professional NFT traders may have to declare their holdings for wealth tax (transfer of assets, functionalities or IP rights). In addition, NFT holders generally need to declare their valuable holdings for wealth tax. In addition, the supply of electronic services may trigger tax obligations in the recipients' jurisdictions. However, there are still no established tax guidelines regarding NFTs.

Anti-Money-Laundering Laws

Traders in NFT may be subject to AML regulations. Under Swiss law, this applies, for example, for NFT traders e.g. accepting more than a certain threshold in cash (or the equivalent in FIAT/ cryptocurrency) in trading transactions. Further, operators of NFT marketplaces may trigger KYC obligations.

Financial Market Laws

At first glance, NFTs may not appear to be financial instruments (e.g. securities). However, securities law may be triggered in certain circumstances to be assessed on a case-by-case basis. Examples include NFTs that are created or minted in a way that grant the issuer the rights to receive a share of the proceeds each time the NFT is sold which can be resold in a secondary market, or NFTs that can be used as collateral to borrow other crypto and digital assets.



It is important to note that ownership of NFT does not translate into ownership of an underlying asset. In fact, the NFT owner owns the original piece of hex values of the linked asset. Correspondingly, buying an NFT does not mean that one is buying the associated rights (e.g. IP or licensing rights).



How EY can support your NFT journey

Getting started: No matter where you are, EY is your trusted business advisor in every step of your NFT journey and may act as a one-stop-shop combining different skill sets.

EY Law

EY offers support understanding and complying with applicable legal and regulatory requirements in Switzerland and globally.

Selected offerings:

- ▶ Issuance support (e.g., token analysis, drafting or reviewing of prospectus, term sheets, investor agreements)
- ▶ Coordination/clearance with authorities/regulators
- ▶ Establishing/strengthening of governance framework: e.g. policy framework, internal control system and functions, AML/CTF, risk management leveraging EY tools (e.g. Blockchain Analyzer, Legal Managed Services)
- ▶ Advising on cross-border regulatory consideration

EY Assurance

EY offers multidisciplinary insights across different business types to help clients mitigate the risk of material misstatement in their financials and accurate reporting matters.

Selected offerings:

- ▶ General assurance services such as external audits, attestation or review services
- ▶ Smart contract review
- ▶ SOC reports and Internal controls review
- ▶ Forensics service
- ▶ Accounting advisory for digital asset holdings and transaction

EY Tax

EY Tax services exist to help our clients meet all the tax requirements related to their industry, business activities and operating locations in the most financially efficient way.

Selected offerings:

- ▶ Analysis of Swiss tax consequences, incl. corporate income taxes, capital taxes, withholding taxes, stamp duties, VAT, individual income and wealth tax
- ▶ Meeting with the tax authorities, if required (i.e. Zug Cantonal Tax Authorities and Swiss Federal Tax Administration "SFTA")
- ▶ Formal agreement ("tax ruling"), with the tax authorities on the Swiss tax treatment of the projected set-up

EY Consulting

EY assists companies and organizations improving their performance, assisting them to identify and mitigate business risk and giving advice on IT controls.

Selected offerings:

- ▶ Assessment of product strategy and business planning incl. custody solutions evaluation and asset management products, platform selection, Token Model Design
- ▶ Engineering consortium ecosystem including the assessment of potential partners and its incentives
- ▶ Assessing risk and control including cyber risks, technology and process risks to facilitate an efficient crypto client onboarding e.g. Token and smart contract review tool

EY Strategy and Transactions

Strategy and Transactions offers services that are designed to help companies make better decisions about how to strategically manage capital and transactions.

Selected offerings:

- ▶ Valuation and business modelling of tokenized assets
- ▶ M&A Advisory
- ▶ Advising on corporate strategy and business case



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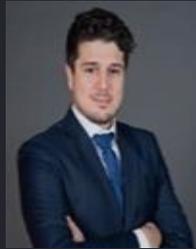
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