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The VAT Treatment of NFTs in the European Union

This article discusses the VAT treatment of non-fungible tokens (NFTs) in the European Union. These tokens have been on the market for some time, but their trade volume has grown exponentially recently. Tax authorities have developed some interest in them as a potential new source of revenue, paying attention to their ecosystem and the parties involved. Some tax authorities have already taken a position, while others have remained silent, waiting for market developments. There are still questions to be answered on the VAT implications of NFT supplies, but initial standpoints can be taken. The European Union has already begun to work towards a common position on the VAT treatment of NFT supplies. The difficulty in determining that treatment lies in the fact that the nature of NFTs has not been defined in a harmonized way. This article intends to briefly analyse each of the VAT components contributing to this definition.

1. Introduction

In the last couple of years, business models[1] have been changing due to the digital transformation of the economy but also due to the application of blockchain technology. One of the major changes has occurred in relation to crypto assets, particularly as its evolution has led to the creation of new tokenized assets. These assets, commonly referred to as "NFTs", which stands for non-fungible tokens, are mainly traded as digital artwork or collectibles, but they have also impacted other industries such as fashion, online gaming and banking. Due to their recent popularity, these assets are being sold and resold for large sums of money and, although most of the existing tax legislation has not considered them, they have already imposed some challenges and raised some red flags in the tax field. In the European Union, the European Parliament has stated that the increasing use of crypto assets is forcing tax administrations to adapt current taxing practices within the single market.[2]

During 2021, the NFT market reported USD 23 billion in trading volume[3] (the equivalent to EUR 22.7 billion[4]). There still has been no official statement made at EU level on how much the trade of these assets represents to the EU VAT revenues in the last couple of years. However, the high revenues generated from their trade are attracting some attention, and tax authorities in the European Union have turned their sights to them as a potential source of additional collection,[5] especially if those revenues are not being taxed.[6]

Due to the lack of legislation at EU level on NFT trade and the VAT consequences for creators, sellers and marketplaces, the tax authorities of some EU Member States have started to take some positions on whether NFTs should be considered as goods or services and what could be their place of supply for VAT purposes. On 20 March 2023, the European Commission VAT Committee (VAT Committee) held its 122nd meeting where the initial VAT reflections on NFTs were analysed. Working Paper No. 1060 was published as a result from that meeting.[7] Spain is the pioneer and has been followed by Belgium. The other EU Member States are yet to take a position on how to treat and regulate NFTs.

In this article the author discusses what could be the potential VAT treatment that NFTs receive in the European Union. To that end she will seek to address the following questions:

- What are NFTs?
- Why are NFTs relevant for VAT purposes?
- How does the NFT market operate?

* **VAT Principal Associate at IBFD. This article is based on the author's thesis for the EU VAT Post-Master programme but includes a brief analysis on additional information published afterwards.**

1. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on a Digital Finance Strategy for the EU, COM/2020/591 final, available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0591 (accessed 9 Mar. 2023).
2. Committee on Economic and Monetary Affairs of the European Parliament, Draft Report on the impact of new technologies on taxation: crypto and blockchain, 2021/2201(INI) (4 Apr. 2022), available at https://www.europarl.europa.eu/doceo/document/ECON-PR-700517_EN.pdf (accessed 9 Mar. 2023).
3. 2021 DappRadar Industry Report (2021), available at https://dappradar.com/reports (accessed 9 Mar. 2023).
4. Exchange rate used on 1 Aug. 2022, available at https://ec.europa.eu/info/funding-tenders/procedures-guidelines-tenders/information-contractors-and-beneficiaries/exchange-rate-inforeuro_en (accessed 9 Mar. 2023).
5. The economic size of the cryptocurrencies market was valued at EUR 2.2 trillion in May 2021, with a peak of EUR 2.5 trillion in Oct. 2021, Joint Research Centre of the Commission (2021). *See* https://www.europarl.europa.eu/doceo/document/A-9-2022-0204_EN.html, at note 6.
6. The VAT gap is the difference between the VAT due and the actual amount collected of VAT in EU Member States. According to the last report on the VAT gap, EU Member States lost EUR 134 billion in VAT revenues in 2019. European Commission, VAT Gap report for 2019 (2021), available at https://taxation-customs.ec.europa.eu/news/vat-gap-eu-countries-lost-eu134-billion-vat-revenues-2019-2021-12-02_en (accessed 9 Mar. 2023).
7. VAT Committee, Working Paper No. 1060 (21 Feb. 2023), available at https://circabc.europa.eu/ui/group/cb1eaff7-eedd-413d-ab88-94f761f9773b/library/7d1ef2eb-b820-4866-a155-785e2373fb80/details [hereinafter Working Paper No. 1060].

– Is EU VAT legislation appropriate to collect VAT from the NFT trade?
– Can blockchain technology play a role for tax collection purposes?
– How are EU Member States reacting to NFT trade?

In section 2., the author provides some key definitions as well as some context for NFTs and blockchain technology. In section 3., she examines the EU legal framework with the aim of determining if the EU VAT legal infrastructure provides appropriate results for the tax treatment of NFTs and NFT marketplaces. A case from the Court of Justice of the European Union (ECJ) is briefly analysed and also the position taken by the tax authorities in some EU Member States: a Spanish ruling, Belgian guidance, some Luxembourg rules (only for income tax purposes and related to the treatment of cryptocurrencies) and Norwegian guidelines (despite Norway not being an EU Member State but as part of the European Economic Area). In section 4., a proposal is included on a VAT tool that could deal with the VAT treatment of NFTs in the European Union. This tool considers two main aspects: (i) the use of blockchain in tax; and (ii) decentralization, which is the same principle NFTs are built on. Lastly, in section 5., the author provides final remarks with respect to the VAT treatment of NFTs within the EU VAT legal framework.

2. NFT Environment

2.1. What are NFTs?

According to the OECD,[8] the term "crypto-asset" encompasses both fungible and non-fungible tokens.

NFTs can be defined as a one-of-a-kind digital asset, stored on a blockchain, which assigns ownership, when placed in the blockchain, that cannot be replaced by any other token or cryptocurrency[9] and that is implemented through a smart contract.[10] The "non-fungible" characteristic means these tokens cannot be exchanged because they are exclusive cryptographic assets, with unique identification codes and metadata that cannot be replicated. The metadata underneath each asset's uniqueness represents the asset itself and derives from its design, including any illustrations, 3D models used or even a URL. All the properties that make an NFT unique in its collection are called "traits"; these are mostly visuals (background, colour, accessories) but could also be stats and scores.[11] "Token" means something that is a symbol or represents something else[12] and "tokenization" means to turn an asset into a digital token to be moved and stored on a blockchain. NFTs are tokenized versions of digital items and can be seen as a blockchain record of a digital asset created.[13]

The difference between an NFT and a cryptocurrency is the fungibility feature. Cryptocurrencies are fungible in their nature as their holders are willing to exchange them for any other cryptocurrency regardless of the serial number to which it belongs and because the unit itself is not relevant. NFTs are per definition non-fungible, which means the unit is the most relevant aspect and cannot be traded or exchanged at equivalency. NFTs do not share the nature of cryptocurrencies or other digital currencies as they are not configured as currencies nor treated as fungible goods. This is confirmed by the "Markets in crypto-assets" (MiCA) proposal in the European Union, by explicitly excluding crypto assets that are unique and not fungible.[14]

NFTs can be created in three ways: (i) by an artist; (ii) by anyone who is able to explore the virtual space and to create some digital content; or (iii) by an algorithm.

To create an NFT, firstly a digital file (i.e. an image or video) is generated, and then the digital file is uploaded to a platform where, through blockchain technology, the generation of the NFT takes place. "Minting" is the term used to refer to the process of creating new NFTs on a blockchain.[15] This process can happen within a proof-of-stake (PoS) consensus mechanism or within a proof-of-work (PoW) consensus mechanism.[16] "Mint an NFT" means the creator records data in a new block of the blockchain to validate and register the information. This is done because, when data is stored on the blockchain, it becomes certifiable and supports the ownership of the NFTs. There are two digital assets with their own entity then: (i) the underlying digital file; and (ii) the NFT that would represent the digital property of that underlying file. The asset to be transmitted through the corresponding NFT marketplace is the NFT and not the underlying digital file.

The minting process is made through a fee paid to the blockchain where the NFT is created to cover computational and storage services.[17] Fees paid in the NFT market are paid with other crypto assets, usually cryptocurrencies. For example, fees in Ethereum are paid in its native currency "ether" (ETH), and to mint an NFT on the Ethe-

8. OECD, *Crypto-Asset Reporting Framework and Amendments to the Common Reporting Standard Public Consultation Document* (2022), available at https://www.oecd.org/tax/exchange-of-tax-information/public-consultation-document-crypto-asset-reporting-framework-and-amendments-to-the-common-reporting-standard.pdf (accessed 9 Mar. 2023).
9. Cyber Gear, *NFT Glossary*, (2022), available at https://cyber-gear.io/NFT-Glossary.pdf (accessed 9 Mar. 2023).
10. Cyber Gear, *Metaverse Glossary* (2022), available at https://cyber-gear.io/Metaverse-Glossary.pdf (accessed 9 Mar. 2023).
11. Id.
12. *Oxford Learner's Dictionaries*, available at https://www.oxfordlearnersdictionaries.com/definition/english/token_1?q=token (accessed 9 Mar. 2023).
13. R. Sharma, *Top 10 Blockchains for NFTs* (27 Oct. 2021, updated 19 May 2022), available at https://www.cryptotimes.io/top-10-blockchains-for-nfts/ (accessed 9 Mar. 2023).
14. European Commission, Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937, COM/2020/593 final (24 Sept. 2020), available at https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12089-Financial-services-EU-regulatory-framework-for-crypto-assets_en (accessed 9 Mar. 2023).
15. According to Working Paper No. 1060, it can also be referred as "launching" an NFT, which is writing the token in the digital ledger with its metadata.
16. Working Paper No. 1060.
17. Some protocols compatible with blockchains provide cheaper, faster and secure payment transactions in relation to minting costs or gas fees. Polygon is an example, *see* https://polygon.technology/ (accessed 9 Mar. 2023).

reum blockchain, the fee is required to be paid in "gas", a crypto token needed to conduct transactions on Ethereum.[18] Until the NFT is minted, it cannot be considered that the token is created, which in other words means that the token only becomes "real" when someone has paid the fee for its creation.

NFTs are enforced through smart contracts (a computerized transaction protocol that executes the terms of a contract) by allowing NFTs to be minted, assigned or reassigned ownership when NFTS are transferred or resold, verifying that NFTs are not divided and ensuring the uniqueness of the digital assets.[19]

After their creation, NFTs cannot be divided but could be fractionalized. This means that an NFT is created (underlying NFT) and then some other NFTs are also created (fractional NFTs or "F-NFTs") to represent collectively the underlying NFT and provide a percentage of ownership of the underlying NFT. This could also be seen as splitting them into fragments or smaller pieces (at least two, and up to millions) by their original owner representing a stake of the original asset.[20] When this happens, each of the pieces is locked into a smart contract as if it were one NFT on its own but is still interconnected with the indivisible original NFT.

NFT collections are an assortment of digital assets released by an artist (or group of artists) containing a limited number of individual NFTs. Typically, these collections consist of numerous NFTs conforming all the same artistic style, with slight variations across each individual token.[21] One of the most famous, popular and still valuable NFT collections is Bored Ape Yacht Club,[22] a collection made up of 10,000 unique NFTs on the Ethereum blockchain, depicting simian avatars with various characteristics. The purchase of a Bored Ape is not about acquiring an avatar or a rare piece of art, but to gain membership access to a club whose benefits and offerings are expected to increase over time. Dribblie, Lucky Block NFTs, Azuki, Meebits and Crypto Baristas are examples of other NFT collections.

2.2. The hype of NFTs

The origin of NFTs goes back to 2012, when Meni Rosenfeld introduced the idea of colouring a set of coins on the blockchain to distinguish it from other assets, similar to regular bitcoins but with special properties and a value independent from the underlying bitcoins, to be used as alternative currencies, commodity certificates, smart property or other financial instruments such as stocks and bonds.[23] The characteristics of the bitcoin prevented the coloured coins concept from being realized but laid the foundation that led to the invention of NFTs.

In May 2014, the first NFT, called "Quantum", was minted by Kevin McCoy on the Namecoin blockchain. Quantum is a digital image of a pixelated octagon that hypnotically changes colour and pulsates in a manner reminiscent of an octopus.[24]

In 2015, with the exponential growth of social media, the character of Rare Pepe evolved into a standalone meme, which led to the next big event in the NFT world. In September 2016, as a result of the growing demand of blockchain collectible assets, the first Rare Pepe images (derivatives of Pepe the Frog) were minted on the Bitcoin blockchain and then released as NFTs in the Counterparty Platform.[25] In October 2016, at a Sotheby's auction, a one-of-one Rare Pepe NFT called "Pepenopoulos" was sold for USD 3.6 million.[26]

After this, Ethereum[27] backed up the NFTs by introducing a set of token standards (subsidiaries of standard smart contracts) to allow the creation of tokens by developers and set up the guidelines on how to create, issue and deploy new tokens in the blockchain and align them to the underlying technology.

In June 2017, a series of 10,000 unique collectible characters stored on the Ethereum blockchain, called CryptoPunks was created by Larva Labs, inspired on the London punk culture and the cyberpunk movement which, at the same time, served as inspiration for the modern CryptoArt movement.[28] The CryptoPunks[29] are 24x24 pixel art images, generated algorithmically, mostly punky-looking guys and girls. Every punk has their own profile page that shows their attributes as well as their ownership for-sale status.

18. Each transaction performed in blockchains requires a fee payment for the computational resources needed to execute them. Gas prices in Ethereum are denoted in *gwei*, which itself is a denomination of ETH (each *gwei* is equal to ETH 0.000000001 (10^{-9}), which means that instead of saying that some gas costs 0.000000001 ether, it can be said that the gas costs 1 *gwei*). The word *gwei* itself means *giga-wei* and equals 1,000,000,000 wei. Wei itself (named after Wei Dai, creator of b-money) is the smallest unit of ETH. T. Beiko, *Gas and Fees*, (2022), available at https://ethereum.org/en/developers/docs/gas/#top (accessed 9 Mar. 2023).
19. *See* sec. 2.4.
20. This happened with CryptoPunks NFTs, explained in sec. 2.2.
21. J. Kelly, *NFT Collections Explained – The Ultimate Guide For Beginners* (2022), available at https://www.nftgators.com/nft-collections/#:~:text=An%20NFT%20collection%20is%20an,variations%20across%20each%20individual%20token (accessed 9 Mar. 2023).
22. Official website https://boredapeyachtclub.com/#/ (accessed 9 Mar. 2023).
23. M. Rosenfeld, *Overview of Colored Coins* (2012), available at https://allquantor.at/blockchainbib/pdf/rosenfeld2012overview.pdf (accessed 9 Mar. 2023).
24. K. McCoy, "Quantum" (2014-21), Non-fungible token, image from Sotheby's, available at https://www.sothebys.com/en/buy/auction/2021/natively-digital-a-curated-nft-sale-2/quantum (accessed 9 Mar. 2023).
25. This platform, founded in 2014 by Robert Dermody, Adam Krellenstein and Evan Wagner, allowed the creation of tokenized assets, *see* https://counterparty.io/ (accessed 9 Mar. 2023).
26. "Pepenopolous" (2016), image from Sotheby's, available at https://metaverse.sothebys.com/natively-digital/lots/pepenopoulos (accessed 9 Mar. 2023).
27. Ethereum was conceived in 2013 by Vitalik Buterin and is a decentral ized, open-source blockchain with smart contract functionality. It is the second strongest cryptocurrency after bitcoin, *see* https://ethereum.org/en/ (accessed 9 Mar. 2023).
28. CryptoArt are rare digital artworks associated with unique and rare tokens that already exist on the blockchain. The concept is based on the idea of digital scarcity, which allows someone to buy, sell and trade digital goods. CryptoArt exists in limited quantity. Popular early examples include CryptoKitties, CryptoPunks, Rare Pepe, CurioCards. *See* J. Bailey, *What Is CryptoArt?* (2018), available at https://www.artnome.com/news/2018/1/14/what-is-cryptoart (accessed 9 Mar. 2023).
29. CryptoPunks, *see* https://www.larvalabs.com/cryptopunks (accessed 9 Mar. 2023).

In November 2017, Dapper Labs introduced CryptoKitties,[30] a blockchain game on Ethereum that allows players to purchase, collect, breed and sell virtual cats. Each kitty has a unique genome that defines its appearance and traits. By allowing the cats to breed (virtually), the game becomes a self-sustaining community where users can create new collectibles and trade them on the Ethereum blockchain.

"NFT" was declared the word of the year 2021,[31] and 2021 was called "the year of the NFTs" due to their booming growth. This looked like the tipping point for NFTs. One of the biggest factors for this to happen was that prestigious auction houses such as Christie's and Sotheby's began selling NFT art,[32] but of course the COVID-19 pandemic had a lot to do too with people spending more time exploring virtual spaces. In March 2021, the American rock band Kings of Leon released their latest album in the form of an NFT, becoming the first music band to ever do so.[33]

NFTs are trending as they represent an online possession that allows to interact and participate in virtual markets. The biggest lure for some has been the price rise and the prospect of big returns from trading with NFTs. For others, NFTs represent the future of ownership, including all kinds of property, with a tokenized status of that property. For artists, NFTs have come as a solution to monetizing their digital artworks, since they may receive more income from NFTs than from regular royalties. NFTs are relevant for tax purposes because of the revenues generated by their trade.

2.3. NFT trade

NFT trade occurs in NFT marketplaces. An NFT marketplace is a digital platform that has a double purpose: (i) allowing users to mint their NFTs on the platform itself; and (ii) buying and selling NFTs in exchange for a fee. OpenSea[34] is the largest digital NFT marketplace for crypto collectibles and NFTs that operates on Ethereum. Magic Eden is the leading NFT marketplace on Solana, Atomic Market on Wax, PancakeSwap on BSC, Objkt on Tezos. Rarible, Binance, SuperRare and Nifty Gateway are examples of other NFT marketplaces.

The NFT trade starts with someone putting its NFT on an NFT marketplace.[35] The potential buyer creates an account on the NFT marketplace to start browsing through the available options. NFT marketplaces do not always know the identity of the buyers since the transaction is carried out using nicknames that buyers adopt to carry out their operations on the network.

NFTs can be sold at a fixed price or through auctions (to the highest bidder (English system) or at a declining price (Dutch system)) and the NFT marketplace charges fees that can be deducted from the sale price (although it is not entirely clear how).[36] A payment method is needed, which means having a crypto wallet with funds to buy NFTs.[37] This requires linking the wallet with cryptocurrencies (it may also be allowed to use a debit/credit card in some cases). One of the most famous of these wallets is "MetaMask". A crypto wallet (e-wallet) is a digital place used to store cryptocurrencies that contains the bank details of the users. There are two types of wallets: (i) hot (online and software-based); and (ii) cold (offline and set on a device, and considered safer to store cryptocurrencies as they are not connected to the Internet).

From the seller's perspective

The seller determines the conditions of the sale: (i) whether at a fixed price or as a timed auction; (ii) the currency; and (iii) the expiration date for the sale. Listing an NFT is free, but a service fee is charged on each sale (e.g. in OpenSea it is 2.5% over the sale price).

In OpenSea's auctions, the reserve price cannot be lower than ETH 1 because OpenSea covers the transaction fee if the auction is successful. If the seller chooses to accept a bid below the reserve price, the seller will have to pay the fee.[38]

The creator of an NFT collects creator's fees every time an NFT is resold on the NFT marketplace.

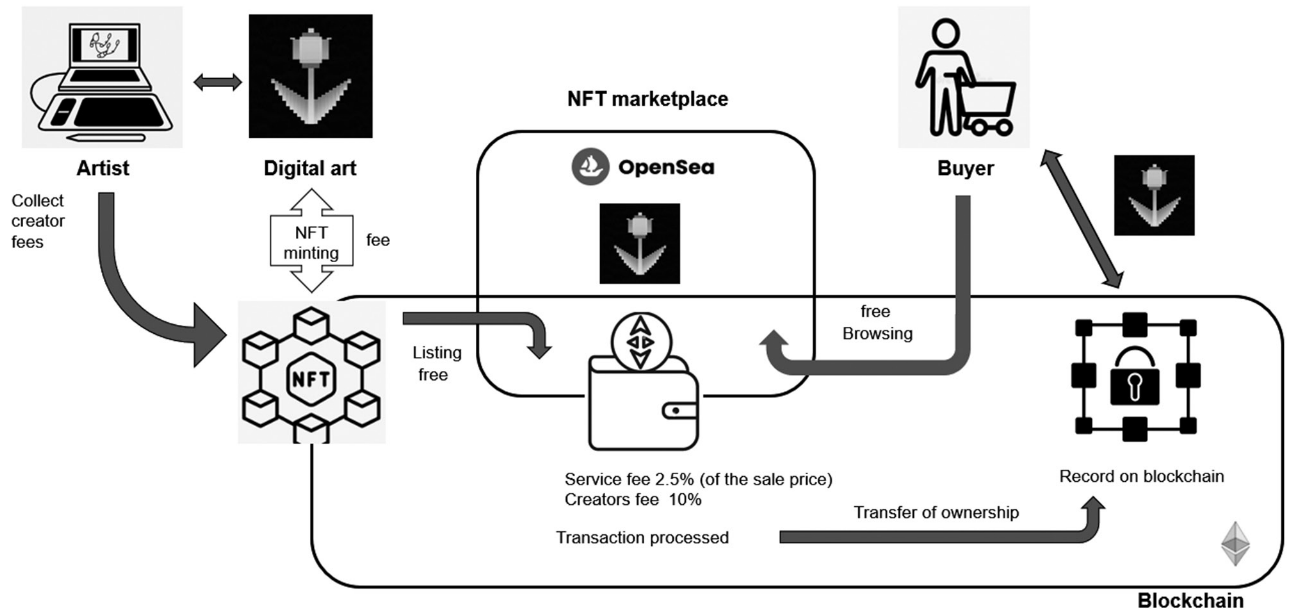
From the buyer's perspective

If the sale is made through a fixed price, the buyer pays the price. If the sale is made through an auction, the buyer places a bid, which means making an offer to the seller of the NFT (e.g. in OpenSea bids must be at least 5% higher than the previous one). When proceeding to checkout, all the details of the NFT (i.e. name, collection, etc.) will be displayed. The crypto wallet will be loaded up to show the estimated gas fees and the time to process the transaction. The transaction speed is determined by the blockchain network traffic and the gas fees. The fees can be adjusted, but lowering them will reduce the transaction speed. The recommendation is to transact when the blockchain network is less busy. *See* Figure 1.

It can be argued that there are two markets in which NFTs are traded: (i) a "primary market" where, after being created, NFTs are sold for the first time; and (ii) a "secondary market" in which the tokens can be resold after

30. CryptoKitties launched 50,000 "Gen 0" cats (referred to as "Clock Cats") that were stored in a smart contract on the Ethereum blockchain. Each cat was to be sold by auction. CryptoKitties have a distinct visual appearance (phenotype) determined by their immutable genes (genotype) stored also in the smart contract, available at https://www.cryptokitties.co/ (accessed 9 Mar 2023).
31. According to nonfungible.com (accessed 9 Mar. 2023).
32. E. Howcroft, *Explainer: NFTs are hot. So what are they?*, Reuters (2021), available at https://www.reuters.com/article/us-crypto-currency-nft-explainer-idUSKBN2B92MA (accessed 9 Mar. 2023).
33. Kings of Leon, When You See Yourself NFT, Contract address 0x557430421f8F3ED0A92ACA211f1c05aD7b606288, Token Standard ERC-721, Blockchain Ethereum, available at https://opensea.io/assets/ethereum/0x557430421f8f3ed0a92aca211f1c05ad7b606288/0 (accessed 9 Mar. 2023). The NFTs can be acquired now through OpenSea where it is explained what the token includes.
34. OpenSea website, *see* at https://opensea.io/ (accessed 9 Mar. 2023).
35. D. Rodeck & F. Powell (editor), *Top NFT Marketplaces Of 2022*, Forbes Advisor (2022), available at https://www.forbes.com/advisor/investing/cryptocurrency/best-nft-marketplaces/ (accesses 9 Mar. 2023).
36. *See* sec. 3.3.
37. OpenSea Blog, *How to Fund MetaMask with ETH*, available at https://opensea.io/blog/articles/how-to-fund-metamask-with-eth.
38. OpenSea, *How do timed auctions work?*, available at https://support.opensea.io/hc/en-us/articles/1500003246082 (accessed 9 Mar. 2023).

Figure 1. NFT trade ecosystem



Source: author's creation.

the original sale. In any case, after the transaction is completed and processed, the NFT marketplace records it on its blockchain showing the change of ownership.

Bridging

Another possibility to trade NFTs is the NFT bridging, which means using a "connecting" service to carry out secure transactions between linked blockchains. A bridge service will move the tokens from one blockchain to another, in exchange of a fee. When using an NFT bridge, a holder deposits its NFT into a smart contract on a given network and gets a confirmation of that deposit by signatures from the oracles.[39] These signatures allow the NFT holder to use the same smart contract to create a duplicate of its NFT on a different network. It can be possible to have the original NFT back by bridging again the NFT.[40]

2.4. NFTs and blockchain technology

Blockchain can be understood as a form of distributed ledger in which details of transactions are held in the ledger, in the form of blocks of information; a block of new information is inserted into the chain of pre-existing blocks via a computerized process by which transactions are validated.[41] "Block" refers to certain amount of information and data stored in consecutive groups that, after reaching its limit, creates a new block to continue the chain. "Chain" refers to a series of things connected one after the other, which in this technology means cryptographical references of each block to its parent. The data in a block cannot change without changing all subsequent blocks, which would require the consensus of the entire network.[42] "Mining" refers to the process of verifying transactions and organizing them into blocks, and then adding them to the blockchain.

Blockchain is the underlying technology behind crypto assets and NFTs. With the blockchain technology, it is possible to validate the authenticity of an NFT, which allows an original asset to be distinguished from any of its reproductions. Ethereum is the most popular NFT blockchain platform. Solana, Binance, Smart Chain, Tezos, Worldwide Asset eXchange (Wax), Flow, Avalanche (AVAX) are other very well-known blockchains.[43]

A "crypto asset" is a type of private asset that depends primarily on cryptography and distributed ledger technology (DLT). The European Central Bank defines a crypto asset as an asset recorded in digital form and enabled using cryptography that is not and does not represent a financial claim on, or a liability of, any identifiable entity.[44] A "cryptography" is the conversion of data into private code using encryption algorithms, typically for transmission over a public network.[45] A "digital token" is any digital representation of an interest, which may be of value, a right

39. Oracles play the role of agents that find information in the real world by checking data from reliable websites. Accordingly, oracles bring external information into the blockchain and serve as a bridge between the blockchain network and the real world. D.R. Post & C. Cipollini, *Fundamental Elements of a Blockchain-Based Tax System – When to Use Blockchain for Tax?*, 14 World Tax J. 4 (2022), Journal Articles & Opinion Pieces IBFD (accessed 9 Mar. 2023).
40. K. Pandey, *What Is NFT Bridging?*, Jumpstart (2022), available at https://www.jumpstartmag.com/what-is-nft-bridging-2022/ (accessed 9 Mar. 2023).
41. European Securities and Markets Authority (ESMA), *Advice on Initial Coin Offerings and Crypto-Assets* (2019), pp. 42-43, available at https://www.esma.europa.eu/sites/default/files/library/esma50-157-1391_crypto_advice.pdf (accessed 9 Mar. 2023).
42. *What is a blockchain?*, Intro to Ethereum (2022), available at https://ethereum.org/en/developers/docs/intro-to-ethereum/ (accessed 9 mar. 2023).
43. Sharma, *supra* n. 13.
44. European Central Bank, Glossary (2022), available at https://www.ecb.europa.eu/services/glossary/html/glossa.en.html (accessed 9 Mar. 2023).
45. *Advice on Initial Coin Offerings and Crypto-Assets*, *supra* n. 41.

to receive a benefit or perform specified functions or may not have a specified purpose or use.[46]

Crypto assets are continuously evolving. According to the European Banking Authority[47] and the European Securities and Markets Authority,[48] most of them fall outside the scope of the EU financial services legislation as they are not issued by a central bank, and that compromises the market integrity, posing some economic risks. The term "virtual currencies" is considered under the scope of crypto assets.[49]

A "cryptocurrency" can be defined as a type of digital currency, secured via cryptography, decentralized, and used for trade or as a long-term store of value.[50] A "coin" is a digital value stored on a blockchain. Bitcoin was the first cryptocurrency, launched in 2009 in a cryptography mailing list by Satoshi Nakamoto.[51]

The term "smart contract" was first proposed and defined by Nick Szabo in 1994, with the goal of evolving contract law practices related to electronic commerce, which were initially described as "a set of promises, specified in digital form, including protocols within which the parties perform on these promises".[52] Smart contracts are programs stored on a blockchain, that run when predetermined conditions are met (if X is true, then Y happens), and are typically used to automate the execution of an agreement so that all participants can be immediately certain of the outcome, without any intermediary's involvement or time loss.[53] In other words, a smart contract is an agreement enforced on a blockchain, irreversible and not subject to change.[54] Used for NFT purposes, smart contracts set the terms and conditions on which NFT trade may occur. The aim of smart contracts is to eliminate third parties and centralized trust systems, and they have also enabled new forms of decentralized software being created (such as decentralized finance (DeFi) and DAOs[55]).

The term "decentralized" refers to a system operating without the control of a central authority, which replaces a distributed peer-to-peer network,[56] contrary to a centralized organization where a hierarchical structure with some authority and control is concentrated within a small group of decision makers.

3. NFTs and VAT in the European Union

3.1. Taxable person and type of supply

A taxable person is defined in the VAT Directive[57] as any person who, independently, carries out in any place any economic activity, whatever the purpose or results of that activity. This means that a person who trades NFTs can be considered a taxable person for VAT purposes. If a buyer of an NFT resells the NFT (secondary market), the buyer will become the taxable person if the conditions under the Directive are met.[58]

The VAT Directive considers two types of supplies: (i) goods; and (ii) services. The former is defined as the transfer of the right to dispose of tangible property as owner,[59] the latter as any transaction which does not constitute a supply of goods.[60] In respect of services, the Directive goes further and provides a definition of telecommunication[61] and electronically supplied services which refer, inter alia, to supplies of images, text and information, and the making available of databases; and also to supplies of music, films and games, including games of chance and gambling games, and of political, cultural, artistic, sporting, scientific and entertainment broadcasts and events.[62]

To complement that definition, Implementation Regulation (IR) 282/2011 indicates[63] that electronically supplied services shall include services which are delivered over the Internet or an electronic network the nature of which renders their supply essentially automated and involving minimal human intervention, and impossible to ensure in the absence of information technology. It is further stated that this type of services shall specifically cover the supply of digitized products; services automatically generated from a computer via the Internet or an electronic network, in response to specific data input by the recipient; the transfer for consideration of the right to put goods or services up for sale on an Internet site operating as an online market on which potential buyers make their bids by an automated procedure and on which the parties are

46. Id.
47. European Banking Authority, *Report with advice for the European Commission on crypto-assets* (9 Jan. 2019), available at https://www.eba.europa.eu/sites/default/documents/files/documents/10180/2545547/67493daa-85a8-4429-aa91-e9a5ed880684/EBA%20Report%20on%20crypto%20assets.pdf (accessed 9 Mar. 2023).
48. *Advice on Initial Coin Offerings and Crypto-Assets*, *supra* n. 41.
49. Id.
50. Cyber Gear, *Crypto Glossary* (2022), available at https://cyber-gear.io/Crypto-Glossary.pdf (accessed 9 Mar. 2023).
51. It is still the most valuable cryptocurrency according to Statista, followed by i.a. Ethereum, Tether, Binance Coin, USD Coin, Ripple and Cardano. *See* Statista, *Price development of the top 100 cryptocurrencies as of March 22, 2022*, available at https://www.statista.com/statistics/655492/most-valuable-virtual-currencies-globally/ (accessed 4 Apr. 2023).
52. N. Szabo, *Smart Contracts* (1994), available at https://www.fon.hum.uva.nl/rob/Courses/InformationInSpeech/CDROM/Literature/LOTwinterschool2006/szabo.best.vwh.net/smart.contracts.html (accessed 9 Mar. 2023).
53. *Smart contracts defined*, IBM, available at https://www.ibm.com/topics/smart-contracts (accessed 9 Mar. 2023).
54. *NFT Glossary, supra* n. 9.
55. A decentralized autonomous organization (DAO) is an organization based on open-source code and governed by its users. It focuses on specific projects and trades the traditional hierarchical systems of legacy corporations for guidelines written on the blockchain. *See* Cyber Gear, *Web3 Glossary* (2022), available at https://cyber-gear.io/Web3-Glossary.pdf (accessed 9 Mar. 2023).
56. *Web3 Glossary, supra* n. 55.
57. Council Directive 2006/112/EC of 28 November 2006, on the common system of value added tax, art. 9(1), OJ L347/1(2006), Primary Sources IBFD [hereinafter VAT Directive].
58. *See* sec. 3.3.
59. Art. 14(1) VAT Directive.
60. Art. 24(1) VAT Directive.
61. Services relating to the transmission, emission or reception of signals, words, images and sounds or information of any nature by wire, radio, optical or other electromagnetic systems, including the related transfer or assignment of the right to use capacity for such transmission, emission or reception, with the inclusion of the provision of access to global information networks, art. 24(2) VAT Directive.
62. Annex II VAT Directive.
63. Council Implementing Regulation (EU) 282/2011 of 15 March 2011 laying down implementing measures for Directive 2006/112/EC on the common system of value added tax, art. 7(1) and 7(2), Primary Sources IBFD [hereinafter IR 282/2011].

notified of a sale by electronic mail automatically generated from a computer.

From the elements of these definitions, it is possible to determine that NFTs do not constitute supplies of goods for VAT purposes; thus, they constitute a supply of services. This position is supported by the fact that the object of the NFT transaction is the digital certificate of authenticity that represents the NFT, but not the physical delivery of the digital file associated with it.

Therefore, NFTs can be assumed to be electronically supplied services since:
- they are delivered over the Internet or an electronic network;
- their supply involves minimal human intervention;
- it is impossible to ensure their supply in the absence of information technology (blockchain);
- their supply refers to digitized products (tokenized);
- they refer to services automatically generated from a computer (algorithm) in response to specific data input by the recipient; and
- they are put up for sale on an Internet site operating as an online market (NFT marketplace) on which potential buyers make their bids by an automated procedure (auctions) and on which the parties are notified of a sale by electronic mail automatically generated from a computer.

If the OECD's definition is considered (section 2.1.), NFTs represent rights that can be traded or transferred to other individuals or entities in a digital manner, and the transfer of rights constitutes also a supply of service.

The EU Commission's standpoint can also be taken into account that all types of electronic transmissions and all intangible products delivered on networks are deemed, for the purposes of EU VAT, to be services.[64]

In addition, a supply of services is subject to VAT within the meaning of the VAT Directive only if effected for consideration, when there is a direct link between the supplied services and the consideration received by the taxable person. According to the VAT Directive,[65] the supply of services for consideration within the territory of an EU Member State by a taxable person acting as such shall be subject to VAT. In the case of NFTs, the consideration is the amount paid every time the token is traded, and this would mean that the sale of an NFT is a supply of electronic services subject to VAT in the European Union.

According to the most recent working paper issued by the VAT Committee,[66] an NFT can be used to acquire a tangible good or to acquire a digital asset. In the first case, it is suggested that upon redemption the NFT is treated similarly to a single-purpose voucher, which means that the transfer is considered as a supply of goods and that the actual handling of the goods is treated as a non-supply. In the second case, the suggested treatment is for it to be considered an electronically supplied service.

3.2. NFTs' place of supply

VAT is designed to tax final consumption. It is relevant to determine the place where consumption takes place in order to define where that consumption needs to be taxed. The OECD International VAT/GST Guidelines establish the destination principle, which confirms that VAT should be levied in the country where the final consumption takes place.[67] The application of the destination principle makes it possible to achieve VAT neutrality in international trade. It is relatively easy to implement this principle for the international trade of goods, but things can get complicated when talking about services and/or intangibles, as their nature is such that it becomes difficult to track the exact place where their supply takes place.

If the consumer is located in the same country as the supplier, there is only one country where the supply can be taxed. However, if consumer and supplier are located in different countries, one of these countries needs to be designed as the place of supply to establish the place where VAT is due, and this will depend on the nature of the service. To complicate things further, in a digital environment there are also technological mechanisms that allow users to alter the jurisdiction in which they are located, using a VPN for example, disregarding the application of the traditional VAT territoriality criterion.

In the European Union, the destination principle is applied as the VAT Directive indicates that the place of supply for services supplied to a taxable person acting as such is the place where the taxable person has established its business,[68] and when made to a non-taxable person, the place where the supplier has established its business.[69] However, in respect of electronically supplied services, the place of supply when provided to a non-taxable person is the place where that person is established, has its permanent address or usually resides.[70]

IR 282/2011 provides presumptions regarding the location of electronically supplied services to a non-taxable person[71] and confirms that they take place where the customer is established, has its permanent address or usually resides, if the service is effectively used and enjoyed there.

If these rules are intended to be applied to the NFTs' market, and it is considered that their creation, trade and holding happen in a digital environment, it becomes almost impossible to determine the place where that supply may be taxed since the taxable person may be located anywhere.

64. Commission of the European Communities, Communication from the Commission to the Council, the European Parliament and the Economic and Social Committee, *Electronic Commerce and Indirect Taxation*, COM(98) 374 final, available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:51998DC0374&from=LV (accessed 9 Mar. 2023).
65. Art. 2(1)(c) VAT Directive.
66. Working Paper No. 1060.
67. OECD, *International VAT/GST Guidelines*, Guideline 3.1. (OECD 2017), available at https://www.oecd-ilibrary.org/taxation/international-vat-gst-guidelines_9789264271401-en [hereinafter *International VAT/GST Guidelines*].
68. Art. 44 VAT Directive.
69. Art. 45 VAT Directive.
70. Art. 58 VAT Directive.
71. Art. 24a and 24b IR 282/2011.

To determine the country of consumption, and hence of taxation, there must be mechanisms or features that are known (or knowable) to connect the supplies with the country where the final consumption of the services is expected to take place.[72] In an NFT context, this becomes problematic, since these mechanisms are based on the idea that there is more than one country involved in the transactions, and moreover, that it is clear and explicit which countries these are. In reality, all parties involved in an NFT trade transaction could be in the same EU Member State, in different EU Member States, or not even in the European Union.

The aim of the latest major reform that took place in the European Union, in July 2021, was to adapt as much as possible the EU VAT legislation to a new digital reality, and for that new rules regarding the place of supply of services were issued. To collect VAT from the so-called digital services when supplied to final consumers established in EU Member States the optional one-stop shop (OSS) regime was extended to entail the "Union" scheme provisions for businesses or professionals established in the European Union and the "non-Union" scheme provisions for taxable persons not established in the European Union, and all business-to-consumer (B2C) services taking place in EU Member States where the supplier is not established.

Electronically supplied services are always subject to VAT in the country where the recipient is located. If the supplier is not established in the same EU Member State as the recipient, two main rules apply: (i) in business-to-business (B2B) transactions the liability falls on the recipient under the reverse charge rule; and (ii) in B2C transactions the liability falls on the supplier, which would be required to register for VAT purposes or use the OSS. In 2021, a new EU-wide threshold of EUR 10,000 was established below which supplies of telecommunications, broadcasting and electronic services within the European Union may remain subject to VAT in the Member State where the taxable person is established.

And here again it can be difficult to apply these rules in an NFT scenario (despite NFTs being considered electronically supplied services) as it could happen that the parties in the transaction cannot be traced to a certain jurisdiction, but also considering that the trade of NFTs happens in an online environment and the currency used for the transactions is virtual.

3.3. Taxable event, taxable amount and VAT rate

There are some possibilities as to whether a taxable event occurs in respect of an NFT, which may have a different VAT treatment:
- creation (minting process);
- donation (including receiving NFTs as rewards); and
- sale or trade of NFTs.

Notwithstanding that the minting process of an NFT is made through a fee paid to the blockchain, this does not constitute a taxable event. The Norwegian tax administration assumes this position too and considers that minting an NFT does not constitute a taxable event.[73]

Donations are exempt from VAT when they are made for charitable purposes, which means they are not subject to VAT. In respect of NFTs, some artists and investors have been donating NFTs to museums or auctioning them for charity. It can be questioned whether these donations have real charitable purposes and, thus, whether or not they constitute taxable events for VAT purposes.

When NFTs are received as rewards, it is usually because NFTs were earned through online games to reward gamers for playing the game and to level up in the game. If players pay to participate in the game, the link between the NFTs earned and the amount paid to enter and play might be, but is not automatically, more obvious, and an analysis needs to be made in each case. If players do not pay to enter and play the online game, some rewards might still be received from sponsors or advertising, this will not trigger a taxable event for VAT purposes.

For the purposes of this article, it will be assumed that only the sale of an NFT is subject to VAT as an electronically supplied service. This, however, does not preclude that every time an NFT is traded, a taxable event for VAT purposes may occur.

The taxable amount related to an NFT transaction is the sale price (if the link between the seller and the purchaser exists).[74] It is irrelevant for VAT purposes whether the NFT is sold at a higher or a lower amount than the price paid at the first sale. It is not clear whether or not the sale price (taxable amount) includes the amount of VAT or whether a margin scheme may be applicable when an NFT is sold in the secondary market.[75] If the supply of the NFT is made for free, it would be considered out of the scope of VAT.

The standard VAT rate in each EU Member State should be the one applicable to the sale of an NFT. However, since some NFTs have been donated as pieces of art (CryptoArt movement), NFT supplies may be subject to a reduced VAT rate.[76]

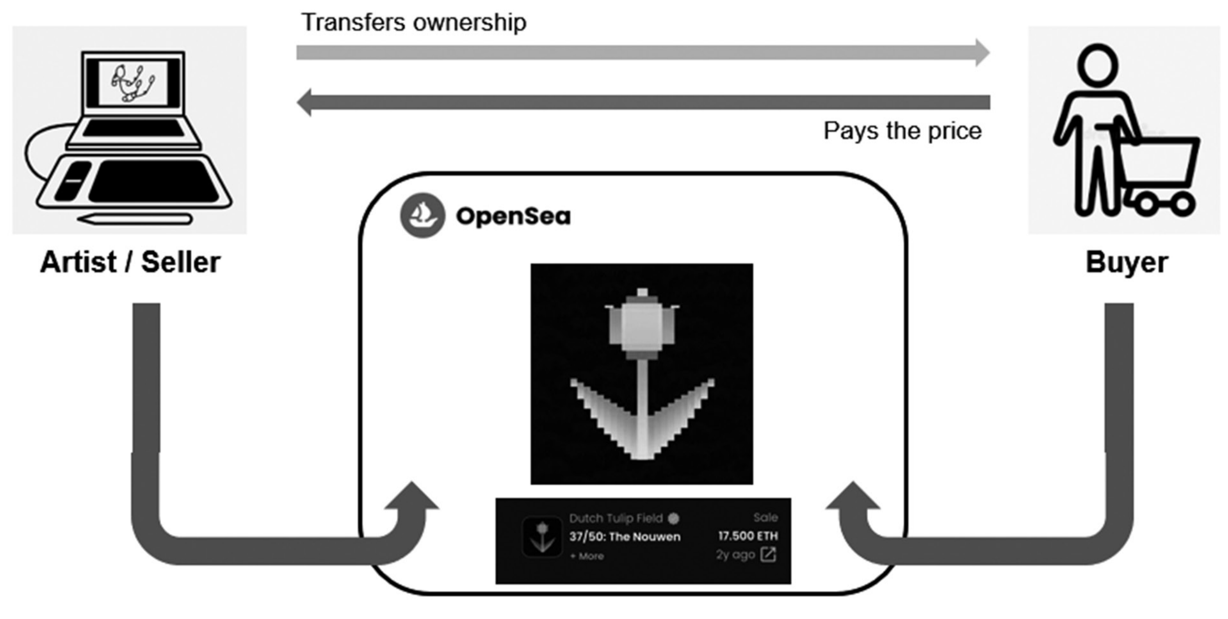
In the transaction shown in Figure 2., the artist or the seller offers the NFT on the NFT marketplace (which in the example is OpenSea) to be acquired by the buyer, who could be anyone. This means that the artis/seller will transfer the ownership of the NFT in exchange for the price paid by the buyer. The transaction takes place through the NFT marketplace.

In the example given, the Dutch Tulip Field is a 50-NFTs collection of pixelated flowers created in August 2021.[77] Let

72. *International VAT/GST Guidelines.*

73. *See* sec. 3.6.4.
74. Art. 73 VAT Directive.
75. *See* sec. 3.6.2.
76. Art. 103 VAT Directive.
77. The Dutch Tulip Field NFT collection pays tribute to the 16th-century Dutch economic and financial progress, when a trader imported tulip bulbs that grew effortlessly in a field near Amsterdam, where the flowers bloomed and their popularity grew, *see* https://opensea.io/collection/dutch-tulip-field (accessed 14 Mar. 2023).

Figure 2. NFT marketplaces



Source: author's creation.

us assume that one NFT in the collection (The Nouwen)[78] is sold for ETH 17.5, which according to coinbase,[79] amounts to EUR 27,454.53 (considering that ETH 1 = EUR 1,570.16). The transaction may look like this:

Transaction details	Amount (EUR)
Price of the NFT (taxable amount)	27,454.53
VAT payable in the Netherlands (21% standard rate)	5,765.45
Service fee (2.5%)	686.36
Creator earnings fee (10%)	2,745.45
Total fees	3,431.81

The first question that arises is if this price of the NFT (the taxable amount) would be inclusive or exclusive of VAT. The following question would be: what happens if the VAT is higher than the total fees paid to the NFT marketplace? In the example, the VAT that corresponds to the transaction amounts to EUR 5,765.45, while the total amount of fees amounts to EUR 3,431.81. Could the NFT marketplaces be responsible to collect this VAT?

The 2.5% service fee that marketplaces charge for their services (referred to as "account fees"), which in the example amounts EUR 686.36, can be charged to the NFT seller or to the purchaser. The analysis of whether there is a legal relationship between the marketplace and the seller or the purchaser must be made in order to confirm the existence of a consideration and to determine if the transaction falls within the scope of VAT.

In respect of the creator earnings fees, these can be seen as royalties for every time the NFT is resold. This may affect the qualification of a taxable person depending on whether the royalties received correspond to rights of successive use and exploitation (which will be subject to VAT) or to resale rights (which will not be subject to VAT).

If the fees are not distinguished at the moment of the sale, and the purchaser of the NFT pays a single amount (perhaps including the NFT price, the gas fee and the service fee), this might indicate the existence of a composite supply.

3.4. VAT collection mechanism

NFTs are electronically supplied services traded through NFT marketplaces (as they call themselves). A marketplace can be considered a digital platform intermediating in supplies of goods or services. In the last years, the role of digital platforms in the VAT collection on online sales has gained a crucial role.[80] It becomes essential to determine then whether the intermediary platform is acting in its own name and on behalf of others or in the name and on behalf of others.

In this article, it is considered that the intermediation of NFT marketplaces is limited and that they only act on behalf of someone else (creator or holder of the NFT) and not in their own name. This means that NFT transactions are carried out between sellers and buyers under a smart contract which would require the seller to issue an invoice

78. *See* https://opensea.io/assets/ethereum/0x495f947276749ce646f68ac8c248420045cb7b5e/31492776344615225703902917429903437746702181938584377190937885294263728603137/ (accessed 14 Mar. 2023)
79. A platform to buy and sell cryptocurrency, *see* https://www.coinbase.com/converter/eth/eur (accessed 14 Mar. 2023).
80. OECD, *The Role of Digital Platforms in the Collection of VAT/GST on Online Sales* (OECD 2019), available at www.oecd.org/tax/consumption/the-role-of-digital-platforms-in-the-collection-of-vat-gst-on-online-sales.pdf (accessed 9 Mar. 2023).

to the buyer of the NFT. In the European Union, Member States strongly rely on the platforms' liability, and it seems that the trend is to rely on the platform's ability to collect VAT on the sale of the NFTs. The author is not convinced that this should be the only way and explains the reasons below.

An electronic interface should be understood as two independent systems, or a system and the end-user, to communicate with the help of a device or program that could encompass, inter alia, a website, portal, gateway, marketplace and application program interface.[81] Considering that NFT marketplaces constitute an electronic platform, accessible via a web address and open to all to trade NFTs, as a preliminary conclusion it could be said that NFT marketplaces are electronic interfaces.

The OECD defines transparent e-commerce platforms[82] as those that provide a trading framework for vendors but are not parties to the commercial transaction between the vendor and the purchaser when low-value goods are traded. Since NFT marketplaces are not parties to the NFTs transactions, it seems they could be considered transparent e-commerce platforms. The problem is that this definition refers explicitly to low-value import of goods, and not services; therefore, it cannot be applied to NFTs.

In the European Union, to try and achieve an effective and efficient collection of VAT, some fictitious solutions are included to identify the persons liable to collect and remit the VAT to the tax authorities. The VAT Directive indicates that electronic interfaces mediating in the distance sale of imported goods or facilitating the supply of goods from suppliers not established in the European Union shall be regarded as the ones who receive and deliver the goods themselves and will be referred to as "deemed supplier".[83] According to IR 282/2011,[84] this fiction is also applicable to services when electronically supplied through a telecommunications network, an interface or a portal such as a marketplace for applications. In these cases, a taxable person taking part in that supply shall be presumed to be acting in its own name but on behalf of the provider of those services unless that provider is explicitly indicated as the supplier by that taxable person, which is reflected in the contractual arrangements between the parties.

Paying attention to the roles that electronic platforms have in the European Union, the result of the described deemed supplier model is that the electronic interface is treated for VAT purposes as if it is the actual supplier of the goods and/or services and will be liable to account for VAT on these sales. In other words, the electronic interface facilitating the sale is considered to have received and supplied the goods and/or services.

81. European Commission, Explanatory Notes on VAT e-commerce rules (Sept. 2020), available at https://taxation-customs.ec.europa.eu/system/files/2020-12/vatecommerceexplanatory_28102020_en.pdf (accessed 9 Mar. 2023).
82. *The Role of Digital Platforms in the Collection of VAT/GST on Online Sales, supra* n. 80, at p. 31.
83. Art. 14(a) VAT Directive.
84. Art. 9(a) IR 282/2011.

Since NFT transactions are only taking place between buyers and sellers, and the NFT marketplaces are not involved but only facilitate the virtual space for the transaction to take place, in the author's opinion they should not fall under the definition of online platforms in terms of the EU legislation. In other words, if NFT marketplaces are only charging fees for the transactions to take place and are not supplying the NFTs themselves, they cannot be considered deemed suppliers for VAT purposes, and thus cannot be responsible for collecting and remitting the VAT (*see* Figure 2., section 3.3.).

If the tax authorities' position is to assimilate NFT marketplaces to the definition of online platforms in terms of the EU legislation, the author opines that NFT marketplaces could be capable of making use of the OSS regime. This is so even though it remains uncertain whether it would be possible fort NFT marketplaces and sellers to register and leaving aside also whether registering would be required from the moment the NFT is minted or only after the first sale.

The OECD has recommended that countries should implement a "registration-based" collection mechanism for non-resident suppliers to achieve an effective collection of VAT on digital supplies.[85] This, in the author's opinion, could represent a potential and complementary solution for NFTs to be included in the VAT scope. However, this requires some specification. This mechanism is designed for supplies made by non-residents. As pointed out before, under a scenario where NFTs are involved, and considering that everything is carried out in a completely digital environment, it may be extremely difficult to define where all the parties are located, and even less to determine their residency status since parties can be located anywhere. In the author's opinion, in the way this mechanism is designed it cannot be replicated to NFT marketplaces.

Thus, the solution is to consider a registration mechanism that applies irrespective of the residency of the supplier or the consumer and focuses only on the participation in the NFT market. The order of the tests needs to be inverted: only after the participation in the NFT market has been confirmed (through several mechanisms that include the use of blockchain, data analytics and identity verification), can residency play a role for the tax determination. And this is possible since data in a block from a blockchain cannot change without changing all subsequent blocks.

A system based on a participation test stored in blockchain technology rather than in the residency factor could become an agile tax compliance model, but only if some requirements are met as follows:

- a portal is created in the blockchain and is available for NFT sellers to register;
- the portal is not administered by tax authorities as it would deviate from DeFi (core principle of NFT market) and would disincentivize participation;

85. *International VAT/GST Guidelines.*

- data analytics are used to track NFT transactions, considering they leave an immutable trail that can be traced even when participants choose to be anonymous through encryption, because the blockchain is transparent in terms of the addresses held, amounts of coins and related transaction flows;[86] and
- a tax incentive exists for NFT traders to withdraw the revenues generated (transferring the crypto wallet funds onto the centralized financial system and not leaving them in a virtual environment).

The author does not support the idea of a monetary and a transactional threshold for NFT marketplaces by means of which the minimum amount of the activities taxed with VAT would be determined, as this would require them to collect and remit the VAT, imposing administrative obligations which most likely NFT traders would not want to comply with (again, considering a DeFi system) and could also leave some participants out if they do not meet those thresholds. The same applies for a withholding system related to financial intermediaries, which so far has not been regulated in the European Union.

3.5. NFTs and VAT exemptions

An exemption for VAT purposes means that no tax should be charged and that the input tax incurred in the course of exempt supplies is non-deductible. Financial services are the typical example of a VAT exemption.[87] In the European Union, Member States may allow businesses to opt to tax certain financial services.

VAT exemptions do not apply to electronically supplied services as a consequence of the ECJ judgment in *Hedqvist*.[88] However, the EU Commission concluded that treating bitcoins as negotiable instruments exempt from VAT under article 135(1)(d) of the VAT Directive seemed the most suitable solution from a VAT perspective, as opposed to treating them as a taxed digital good. Furthermore, in concluded that the supply of any goods and services subject to VAT, remunerated with bitcoin, should be treated as any other supply for VAT purposes. After the ECJ judgment, it became clear that in such circumstances bitcoin acts as a means of payment and that no VAT should be levied on the value of the bitcoins themselves.[89] This means that services consisting in the exchange of bitcoins for fiat currency and vice versa were found to be exempt for VAT purposes.

The EU Commission examined[90] whether the services provided by exchange platforms acting as an intermediary fall within the scope of VAT where the platforms enable trade directly between bitcoin users by only offering a virtual marketplace and charge a fee for using its trading tool. The conclusion was that these services would be taxable because fees are paid to the platform by bitcoin users and because these services cannot be considered a transaction concerning currency, nor a financial service.

Based on that analysis, and to define whether supplies of NFTs are exempt from VAT, attention must be paid to whether consideration is paid and if the supply of services is made by a taxable person acting as such. It can be discussed whether NFT marketplaces provide services as platforms acting as intermediaries. However, since NFT marketplaces charge fees for the transactions carried out in their environment (even though fees are usually covered with other cryptocurrencies) and, as discussed before this constitutes economic activities for VAT purposes, services related to NFT marketplaces offered for consideration would be taxable.

The nature of the transactions carried out by traders on an NFT marketplace should not affect the VAT treatment of the services provided by the marketplace itself. In addition, in the author's opinion, it is doubtful whether trading NFTs can be considered a financial service. Therefore, in the opinion of the author, NFTs are not exempt from VAT.

3.6. National EU rules

3.6.1. *Spain*

The Spanish tax administration is the pioneer and leading tax authority in the European Union to comment on NFT sales. This tax administration issued Ruling V0486-22 on 10 March 2022[91] as a result of a consultation concerning the VAT treatment of the services provided by an individual that sells illustrations transformed by Photoshop (transformation of photographs making unique pieces) through an Internet auction. The object of the sale was not the illustrations themselves but NFTs that granted the buyers rights of use, not the underlying rights to the property of the work.

In the consultation, the Spanish tax administration provided a thorough analysis of how the transfer of some NFTs should be treated under the Spanish and EU rules and determined the following:
- in respect of the taxable status of the supplier of the NFTs, it was defined that the creator of the digital content acted as an entrepreneur or professional and therefore should be considered a taxable person for VAT purposes;
- NFT transactions qualify as services, specifically electronically supplied services, and not as a supply of goods as NFTs do not entitle their holder to the purchase of any tangible property;
- the place of supply will be the EU Member State of consumption, taking into account the threshold of EUR 10,000. If this threshold is not exceeded and the supplier is domiciled in the Spanish territory, the place where the taxable event occurs will be Spain,

86. F. Panetta, *For a few cryptos more: the Wild West of crypto finance*, speech, European Central Bank (2022), available at https://www.ecb.europa.eu/press/key/date/2022/html/ecb.sp220425~6436006db0.en.html (accessed 9 Mar. 2023).
87. Art. 135(1)(b)-(f) VAT Directive.
88. SE: ECJ, 22 Oct. 2015, Case C-264/14, *Skatteverket v. David Hedqvist*, Case Law IBFD (accessed 4 Apr. 2023).
89. VAT Committee, Working Paper No. 892, sec. 5.2.2. (4 Feb. 2016), Primary Sources IBFD.
90. Id., at sec. 5.2.5.
91. ES: Ruling, 10 Mar. 2022, V0486-22, Taxation in the Value Added Tax of the services provided by the consultant, General Directorate of Taxes, State Secretary of Finance (in Spanish): available at https://petete.tributos.hacienda.gob.es/consultas (accessed 9 Mar. 2023).

unless the option to tax the supply at destination has been exercised, in which case the supply of the NFT will be subject to Spanish VAT irrespective of where the purchaser is domiciled. In addition, the standard rules for B2B transactions apply in cases where the purchaser of the NFT is a taxable person; and
– the OSS scheme might be applicable.

3.6.2. Belgium

On 30 June 2022, the Belgian tax administration published the tax treatment applicable to cryptocurrencies and NFTs on its official website.[92] There, it is clarified that NFTs are not considered means of payment but digital collectibles or digital art objects. It is indicated that the VAT exemption provided for in article 44(3)(9) of the Belgian VAT Code[93] cannot be applied to them. In addition, it is elucidated that NFT trade must be regarded as a supply subject to VAT, insofar as these transactions are deemed to take place in Belgium.

Furthermore, it is said that according to article 7(2)(a) of IR 282/2011, the supply of digitized products is generally to be regarded as a service provided by electronic means. Consequently, pursuant to articles 21(2) and 21bis(2)(9) of the Belgian VAT Code the sale of an NFT can be considered as a service, and since NFTs are not goods, resellers of NFTs should be considered taxable persons for VAT purposes that cannot invoke the special profit margin regime provided for in article 58(4) of the Belgian VAT Code.[94]

Lastly, the Belgian tax administration made clear that to the extent that the sale of NFTs is deemed to take place in Belgium, the standard VAT rate applies (21%)[95] as they are not regarded as works of art within the meaning of Decree No. 20 on VAT rates.[96]

3.6.3. Luxembourg

The tax authority in Luxembourg has not yet made any precise statements about the taxation of NFTs for direct nor indirect taxes.

It has only been stated in Circular 787[97] that following the ECJ judgment in the *Hedqvist* case, the VAT exemption provided for in the VAT Directive[98] covers not only traditional currencies but also virtual currencies (such as bitcoin), insofar as these virtual currencies have no other purpose than to be means of payment.

This could mean that if NFTs are considered "other types of cryptocurrencies" and have no other purpose than to be means of payment, their trading could fall within the VAT exemption provided for in the VAT Directive.[99] It would be a different case if NFTs are to be regarded as electronically supplied services (such as they are for the purposes of this article) where they should not benefit from any VAT exemption and, thus, be subject to VAT.

In addition, in another circular[100] it is established that the sale or mining of a cryptocurrency can be classified as a commercial activity if it goes beyond mere private asset management, and the following criteria are used to indicate the existence of a commercial activity, which eventually may have some VAT effects: (i) existing facilities or an organization intended for the operative performances for virtual cryptocurrencies; (ii) financing through debt capital; (iii) frequent rotation of the stock of virtual cryptocurrencies; and (iv) trade on behalf of third parties.

3.6.4. Norway

The Norwegian tax administration has published some guidance on the VAT treatment of NFTs on its official website,[101] There it is indicated that an NFT is considered an asset, and that the tax rules applicable to them are the same as for other virtual assets.

The tax administration states that creating an NFT (minting) does not trigger taxation but that there will be realization (sale) of any cryptocurrency the user has used as payment for the creation. It is further indicated that the costs related to the creation of the NFT will be included in the input value if the NFT is later sold.

It is also stated that the taxable value of NFTs is included in the basis for net wealth tax and that there are separate rules for the taxation of home contents or other movable property. Moreover, an NFT will not normally be considered home contents/movable property, as the NFT in itself is a digital code and not the actual object it is linked to. If an NFT has been acquired for investment purposes, it will still not fall under the special rules that apply to home contents/movable property.

4. Proposal for a New VAT Collection Tool

In words of Madeleine Merkx,[102] when discussing potential applications of blockchain technology to tax, VAT (as a transaction tax) comes to mind due to the blockchain's suitability to record transactions. However, the possibility of executing anonymously virtual transactions, especially

92. Belgian Federal Public Service Finance, *Blockchain*, Tax regime applicable to cryptocurrencies and NFTs (2022) (in French and Dutch), available at https://eservices.minfin.fgov.be/myminfin-web/pages/public/fisconet/document/1346e129-0cb0-4eb5-bf31-927083890fb7 (accessed 9 Mar. 2023).
93. BE: Value Added Tax Code, 1969, available at https://eservices.minfin.fgov.be/myminfin-web/pages/public/fisconet/document/0d4dbaa6-8f28-4044-b582-79fb5171220d.
94. Art. 311 et. seq. VAT Directive, "Special arrangements for second-hand goods, works of art, collectors' items and antiques".
95. According to the response to parliamentary question 705 from member of parliament Emmanuel Burton of 3 Nov. 2021, *see* https://www.dekamer.be/QRVA/pdf/55/55K0073.pdf.
96. BE: Royal Decree No. 20 of 20 July 1970 laying down reduced VAT rates, specifically related to Annex, Table A, Item XXI.
97. LU: Circular No. 787, Registration Duties, Estates and VAT Authority, Transactions involving virtual currencies (2018) (in French), available at https://pfi.public.lu/fr/publications/circulaires/2018/circ-787.html (accessed 9 Mar. 2023).
98. Art. 135(1)(e) VAT Directive.
99. Id.
100. LU: Circular L.I.R. No. 14/5 – 99/3 – 99bis/3, Virtual currencies (2018), available at https://impotsdirects.public.lu/dam-assets/fr/legislation/legi18/circulaireLIR14-5-99-3-99bis-3du26072018.pdf (accessed 9 Mar. 2023).
101. The Norwegian Tax Administration, *NFT*, *see* https://www.skatteetaten.no/en/person/taxes/get-the-taxes-right/shares-and-securities/about-shares-and-securities/digital-currency/nft/ (accessed 9 Mar. 2023).
102. M. Merkx, *VAT and Blockchain: Challenges and Opportunities Ahead*, 28 EC Tax Review 2 (2019).

when based on blockchain technology, is one of the biggest challenges to deal with. This, in respect of NFTs, raises concerns on the VAT place-of-supply rules (as analysed in section 3.2.) because it becomes complex to determine the place where the customer resides or is established, and the place where the supplier is established.

In the European Union, Member States strongly rely on VAT collection through online platforms (digital intermediaries) as mentioned in section 3.4. Blockchain technology has the potential to cut out the intermediaries by allowing: (i) the possibility to record certain data (with a clear indication of the time when the data was recorded); (ii) the use of private (permissioned) blockchain for sensitive matters (i.e. contact details of users, users' identity, bank account details); and (iii) the possibility to make and track automatic payments processed in a digital environment, or even the possibility of replacing VAT with a separate cryptocurrency (the so-called VATCoin[103]).

If there is anything to learn about technological and digital developments (such as NFTs), it is that they refuse to be confined to a country, a type of supply or a commercial sector, and above all, to abide by the same regular, centralized and standard rules. If the European Union as a region, or any of the EU Member States, intends to apply VAT to NFT transactions, in this article it is sustained that some adjustments to the VAT system need to be made. In the author's opinion, a technological tool is missing and still needs to be developed for EU Member States to be able to collect VAT from transactions carried out in respect of NFTs because the EU VAT legal framework is currently not enough to capture and collect VAT from these transactions, and trying to adapt the new reality to the old standard rules is insufficient, too. This tool needs to be a solid attempt to incorporate technological progress and for this to happen, the use of blockchain and the basic principle of NFTs (decentralization) have to be taken into account.

Decentralization and the DeFi[104] concept refer to the type of banking services that operate without fees and/or approvals for transactions, loans and trade of crypto assets, which take place through a public code that automatically stores and verifies the transactions.[105] DeFi is considered an arrangement of consumer-facing smart contracts, executing a predefined business logic within a transparent computational environment afforded by a permissionless blockchain technology.[106]

Blockchain technology can complement a decentralized structure by validating transactions that would allow tax administrations to monitor VAT-relevant data from other jurisdictions and determine the validity of the transactions at any time. Blockchain technology can also be used to collect VAT directly as part of the electronic payment process and, as mentioned before, to cut out the intermediaries for this purpose.

As highlighted by Robert Müller,[107] an important part of blockchain technology is the public verification of entries by miners who check transaction data and then introduce it on the blockchain, this verification being transparent for all participants in the network. If data is originated on a closed blockchain, verifying information is relatively easy. Problems arise when data is not originated but only executed on the blockchain. One more important aspect is the immutability of VAT-relevant data stored on the blockchain, which makes it quite difficult to manipulate it. The issue is then the tension that exists between moving towards transparency and the desire to protect the privacy of information.

For NFT purposes, the technological tool could point out directly to the acquirer of an NFT, add the respective VAT to the transaction and allow to collect VAT directly from them (as final consumers in this transaction), without the need to rely on the NFT marketplaces as digital intermediaries for this to happen. Since in a blockchain-based technology DeFi stack, and in contrast to traditional banking services, users interact directly with the application independently of any intermediary service provider, tax administrations may do the same and use the relevant data monitored and captured to connect the electronic payments.

Considering it can be difficult to find an incentive to bring virtual transactions into centralized systems (i.e. the traditional finance system), solutions need to come from a digital perspective and incorporate technological elements that allow to deal with these transactions from a virtual reality. Metaverse[108] and web3[109] can also be explored for these purposes, as the former already offers the possibility to buy and sell art and collectibles (i.e. NFTs) and because it is intended to mirror the physical world. The latter, among others, uses cryptocurrency for spending and sending money online instead of relying on the infrastructure of banks and payment processors, and operates using incentives and economic mechanisms instead of relying on trusted third parties.

In the author's opinion, tax administrations need to start considering collecting taxes (VAT included) through cryptocurrencies, and then bring the collected taxes into fiat currency. This because, ultimately, only by using the same technology that new business models have as a base (in the same way that NFTs are based on blockchain tech-

103. R. Thompson Ainsworth et al., *A VATCoin Solution to MTIC Fraud: Past Efforts, Present Technology, and the EU's 2017 Proposal*, 89 Tax Notes International 335, TNI 4-38 (2018).
104. As explained in sec. 2.4., it refers to a system operating without the control of a central authority, replacing this authority with a distributed peer-to-peer network.
105. *Web3 Glossary*, *supra* n. 55.
106. J.R. Jensen, V. von Wachter & O. Ross, *An Introduction to Decentralized Finance (DeFi)*, Complex Sys. Informatics & Modeling Q. 26, pp. 49-50 (2021).
107. R. Müller, *Building a Blockchain for the EU VAT*, 100 Tax Notes Intl. 8, p. 1043 (2020).
108. The term "metaverse" was first used in 1992 in the science fiction novel *Snow Crash* written by Neal Stephenson, as a combination "meta" and "universe". In recent years, interest in its development is influenced by Web3, a concept for a decentralized iteration of the Internet. Foundation team, *Everything you need to know about the metaverse* (2021), available at https://foundation.app/blog/enter-the-metaverse (accessed 9 Mar. 2023).
109. Ethereum, *What is web3?* (2022), available at https://ethereum.org/en/web3/ (accessed 9 Mar. 2023).

nology) would it be possible to imagine a solution where successful enforcement of VAT can be truly ensured.

NFT transactions have easily challenged the e-commerce VAT provisions applicable throughout the European Union as they can be performed by any seller and any consumer located in any EU Member State or even outside the European Union. As Rubén Bashandeh[110] has accurately pointed out, in the complex NFTs scenario, the VAT Directive is being challenged because the identity of the users is unknown and because NFT marketplaces that foster the exchange of the NFT seem to have no ownership, making it impossible to track these transactions, let alone to tax them.

As discussed in section 3.4., the proposal to tax NFT transactions with VAT requires to consider a collection mechanism that applies irrespective of the residency of the supplier or the consumer and focuses only on the participation in the NFT market. And this is where blockchain technology comes in handy to identify the participation since data in a blockchain cannot easily be changed without affecting other blocks. NFT marketplaces can still be useful but not as collection agents, only as third-party informants.

A system based on a participation test stored on blockchain technology as explained in section 3.4. and the tool collection suggested in the present section, may jointly be an agile tax compliance instrument if the following goals are pursued:

- focusing on the participation element rather than on the residency aspect of the users;
- cutting out the intermediaries' participation for tax collection;
- implementing a collection and registration system stored on a blockchain; and
- using cryptocurrency instead of relying on the infrastructure of banks and payment processors.

5. Conclusions

In the author's view, NFTs qualify as electronically supplied services under the current state of EU law. Whether it is the correct treatment or not remains uncertain as so far, the analysis of how VAT will fully apply to the NFT market in the European Union is not finalized and EU Member States are far from reaching a common solution. The author reached this conclusion by examining the EU VAT legal framework and different EU Member States' standpoints. EU Member States may agree on some of their features and a possible VAT treatment, but there are still some issues to be defined.

The question of whether the EU VAT legislation is appropriate to collect some VAT from the NFT trade should, in the author's opinion, be answered in the negative. The EU VAT legislation can certainly add elements for consideration but several aspects are still to be determined and discussed. In regard of the role that blockchain plays for tax collection purposes, the answer is positive and represents a topic to be further developed.

As for NFTs, it can be said that they are at a pretty much developed stage in terms of commercial and business matters, but understanding how they operate and how to treat them for tax purposes is still at a very early stage of development, and that makes it difficult to collect VAT from transactions carried out with them.

The NFT market is unregulated in most jurisdictions. From a VAT perspective, the main concern around NFTs is what is really being supplied when an NFT is created and subsequently sold. The type of supply matters, as it refers to the way or form in which the consumer receives the NFT. The trend in the European Union is to consider the supply of NFTs as a supply of services (not a supply of goods), and specifically as electronically supplied services. No VAT exemptions are currently applicable as the effects of the ECJ *Hedqvis*t judgment cannot be extended to NFTs since they are not considered cryptocurrencies.

Another relevant topic is the location of consumers and sellers as it can be extremely difficult to identify the place of consumption or supply. It is clear that the sale of an NFT is considered a taxable event. However, additional elements need to be considered: that the NFT seller charges VAT at the time of the sale, the VAT treatment of the commission paid by the creator of the NFT and the way in which the seller's commission will be charged.

In addition, the European Union heavily relies on making the online platforms involved in online sales liable for collecting the VAT due from the customer, which makes it relevant to determine whether NFT marketplaces fall under the electronic platform definitions applicable in the European Union as part of the VAT e-commerce package.

Technological innovation is a worldwide phenomenon that has put blockchain and its underlying technology on the spot, with all the opportunities that have come with it, especially in the financial world, but also for tax and new business models. Financial crypto assets (e.g. cryptocurrencies, digital wallets) arose as big promises for financial markets and infrastructures and have opened the road for new assets to emerge, such as NFTs. NFTs represent ownership of artwork, music, videos and other online collectibles that exist on blockchains. At the EU level some action has already been taken to track and tax them, but it is still not enough. International coordination and consistency are required.

All the consequences that the NFT trade may bring are still unpredictable, but there is certainly an undeniable hype. It is expected that eventually NFTs will become less trendy and more commonly used, but so far they still represent large revenues and are linked to the most expensive industries (e.g. fashion, art, financial services). The key takeaway from the analysis carried out in this article is that the digital world will continue evolving, and, as has been said repeatedly, the traditional standard rules are insufficient to cope with this evolution.

110. R. Bashandeh, *E-Commerce VAT Concerns*, 33 Intl. VAT Monitor 3 (2022), Journal Articles & Opinion Pieces IBFD (accessed 9 Mar. 2023).