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Transferring Digital Artworks on Online Market Platforms

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Abstract: By writing this paper, the authors intended to answer questions raised by the transfer of digital artworks in the online space. At the beginning of the study, the basic expressions, including NFT digital artwork, will be explained. Then, it will be examined how these new forms of artwork can be treated by civil law. Although NFTs change hands daily, their legal nature, i.e. if they shall be deemed as things in the civil law sense, is unclear. If NFTs are treated as things, they can be a subject of ownership, and the provisions on the transfer of ownership rights shall be applied, which raises several further questions. According to another approach, NFTs embody the right to dispose, while there are other opinions as to which NFTs, following the model of bank account money, shall be deemed as claims facilitating the application of the provisions of the law of obligations. After reviewing the different approaches to the legal nature of NFTs, features of online auctions of NFT artworks will be introduced. Then, it will be examined if the platforms enabling online auctions fall under the scope of the recently adopted Digital Market Act and if so, which rules of the Act are applicable for them.

Keywords: NFT, non-fungible token, digital artwork, online auction, online market platform, gatekeeper, DMA

1. Preliminary thoughts

Seeing the emergence of regulatory development around the decentralised platforms as service providers also related to digital artworks, it is important to understand the forming legal framework stabilising non-fungible token (NFT) usage as a guarantee of any kind of digital asset such as digital artworks on online trading platforms. In the present scientific thesis, besides the terminology determination of digital artwork as a non-traditional type of artwork and its relevant trading platforms, we aim to collect and give a proximate explanation of NFT-based legal guarantee of the origin of digital assets in

the case of secondary market use. This type of special token, however, protects, individualises and for this purpose creates a digitally marketable position for digital artworks, but can be found and used in fully digitalised surfaces. To protect consumers of online market users, a now-forming regulatory framework is being under creation by the European Union governing bodies. Hereby we collect relevant regulatory changes and steps forward affecting the high-priced commercial appearance of 'NFTs' on secondary marketplaces which operate exclusively in the crypto-driven metaverse.

We attempt to analyse the European Digital Markets Act (hereinafter referred to as DMA)[1], which entered into force in May 2023, together with the Hungarian Civil Code (hereinafter referred to as HCC[2]) regulation of right in rem, being the basis of ownership change. Besides ownership right considerations, smart contracts as servants of NFT markets are also the focus of our research, namely the legally binding force of these not typical contract formulations created and activated also in the metaverse.

2. Clarification of terminology

The appearance of new technologies in the field of classical civil law requires professionals to be familiar with the operation of these digital mechanisms. However, these technologies have their own terminology which we shall know, understand and translate somehow for those who have no advanced IT skills. The problem of transferring ownership of digital artworks on online market platforms makes it necessary to be familiar with the content of several expressions which are basic regarding the topic. These expressions relate either to the phenomenon of digital artworks or the operation of goods, including artworks on any online market platform.

The followings explain the most important expressions to provide a theoretical foundation.

a) *Big data.* Big data refers to a large amount of data that originates from a large amount of information, and aggregates from different sources and are generated very quickly in terms of their properties. This information and data can be created by humans and machines, typically in the form of XML files, web pages, structured, partially structured, and unstructured data sets (Wang et al., 2016). Large companies such as PwC, IBM and KPMG provide a wealth of literature on big data analytics and business economics, as well as company-specific programmes for managing large data sets.[3]

b) *Blockchain.* Blockchain is a ledger, i.e. book of records, of all transactions, grouped in blocks, formulated with a (decentralised) virtual currency scheme (European Central Bank, 2015, p. 7). It is a kind of distributed ledger technology. It is a type of database that takes several records and puts them in a block rather than collating them onto a single sheet of paper. Each block is then 'chained' to the next block, using a cryptographic

[1] Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector and amending Directives (EU) 2019/1937 and (EU) 2020/1828 (Digital Markets Act), OJ L 265, 12.10.2022, pp. 1–66.

[2] Act V of 2013 on the Hungarian Civil Code.

[3] See for example PwC: Industry 4.0 – Building the digital enterprise, 2016, PricewaterhouseCoopers LLP.

signature. This structure allows blockchains to be used like a ledger, which can be shared and corroborated by anyone with the appropriate permissions. Each ledger keeps a copy of the digital database of all the transactions that have ever occurred (transactions record) which makes it possible for anyone to check the database, but, at the same time, no one can modify it.

A shared database for recording online transactions is called a ledger. The data structure is used in online distributed ledgers, storing and transmitting data in digital packets called 'blocks'. These blockchains use cryptographic and algorithmic methods to capture and synchronise data in the network. This is done in a way that data is also rendered immutable once it has been recorded. A blockchain is therefore a kind of record-keeping system that operates automatically, without any intermediary, such as a bank, credit institution, or accountant. The data recorded may be tangible, like a house, a car, or cash but can be intangible, like intellectual property, copyrights, patents, or know-how. The shared ledger may be accessible only to authorised members of the network, who can only use it for orders, payments, invoices and smart contracts.

At the EU legislative level, as part of the EU's digital finance package, a regulation was adopted in Autumn 2022[4] that regulates market infrastructures based on distributed ledger technology, to promote digital operational resilience and to implement digital financial services. The legislative package includes the potential and innovation of the digital revolution through European businesses, with the means to define and clarify definitions.[5] The movement of financial instruments issued through shared ledger technology will also be covered by the 2022 Hungarian legislation.[6]

c) *Cloud service.* A computing service is an interface, where two computing devices – hardware or software – or a computer and a human use it, meet and work together. There are three distinct types of cloud services: private, hybrid and public cloud.

d) *Crypto assets.* It is the main financial application of blockchain technology. According to the recently adopted European rules on markets in crypto assets (hereinafter referred as to MiCA),[7] crypto asset means a digital representation of value or rights which may be transferred and stored electronically, using distributed ledger technology or similar

[4] Regulation (EU) 2022/2554 of the European Parliament and of the Council of 14 December 2022 on digital operational resilience for the financial sector and amending Regulations (EC) No 1060/2009, (EU) No 648/2012, (EU) No 600/2014, (EU) No 909/2014 and (EU) 2016/1011, OJ L 333, 27.12.2022, pp. 1–79 (Hereinafter referred as to DORA).

[5] Regulation 2022/858 of the European Parliament and of the Council of 30 May 2022 on a pilot regime for market infrastructures based on distributed ledger technology, and amending Regulations No 600/2014 and (EU) No 909/2014 and Directive 2014/65/EU, Regulation No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Regulation No 648/2012, Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories and amending Directives 98/26/EC and 2014/65/EU and Regulation No 236/201, Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems, Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU.

[6] Act LXIX of 2022 on the amendment of laws affecting the financial sector, Article 12.

[7] 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, Brussels, 24.9.2020.

technology.[8] MiCA distinguishes three types of crypto assets. *Asset referenced token* means a type of crypto asset that purports to maintain a stable value by referring to the value of several fiat currencies that are legal tender, one or several commodities or one or several crypto assets, or a combination of such assets.[9] These tokens serve as a means of payment due to the stability of their value.

The main purpose of *electronic money token* (or e-money token) as a type of crypto asset is also to be used as a means of exchange, while it purports to maintain a stable value by referring to the value of a fiat currency that is legal tender.[10] So, this kind of crypto asset is primarily a means of payment, but its value is pegged to a single fiat currency for reasons of stability. In addition to the differences, the e-money token has a few similarities in its functioning with the use of *electronic money,* insofar as they also act as electronic substitutes for coins and banknotes and are used for payment (for a comparison see Bacsó, 2016).[11] The holders of electronic money may require the electronic money institution to redeem their electronic money at par value for fiat currency at any time. This possibility, contrary to current practice, will also be available for e-money tokens after the entry into force of MiCA.

As the third type of crypto assets, MiCA refers to *utility tokens,* which, together with the above mentioned two other types of crypto assets, do not qualify as means of payment or exchange, i.e. do not serve financial purposes, but serve as digital access to goods or services available on DLT and are accepted only by the issuer of the token in question.[12] Therefore, this latter type of crypto asset is essentially linked to the functioning of the digital platform and digital services.

e) *Cryptocurrency.* A kind of crypto asset functioning as a currency, as a means of payment. It operates as a medium of exchange like the currency of coins or banknotes, but it exists only in digital (virtual) form, and it is secured by cryptography by using distributed ledger technology. In the case of a cryptocurrency, both the creation and the transactions are controlled by mathematical algorithms. Cryptocurrencies are a subset of digital currencies but can also be classified as alternative currencies or virtual currencies. A common feature of most cryptocurrencies is their decentralisation, i.e. they operate without centralised control (like the Internet), which allows them to be used as a cross-border currency. There are several kinds of cryptocurrencies nowadays. Cryptocurrencies can be clustered into two different categories: coins and tokens. Cryptocurrencies in the

[8] MiCA, Article 3(1), point 2.

[9] MiCA, Article 3(1), point 3.

[10] MiCA, Article 3(1), point 4.

[11] Electronic money is the monetary value represented by a claim on the issuer, stored electronically, including magnetic storage, issued upon receipt of funds for the execution of payment transactions as defined in point 5 of Article 4 of Directive 2007/64/EC and accepted by a natural or legal person other than the electronic money issuer. See Directive 2009/110/EC of the European Parliament and of the Council of 16 September 2009 on the taking up, pursuit and prudential supervision of the business of electronic money institutions amending Directives 2005/60/EC and 2006/48/EC and repealing Directive 2000/46/EC, OJ L 267, 10.10.2009, pp. 7–17, Article 2, point 2. Article 6(1) point 16 of the Act CCXXXVII of 2013 on Credit Institutions and Financial Enterprises regulates electronic money as a payment instrument and defines it in accordance with the Directive.

[12] MiCA, Article 3(1), point 5.

first group use their independent blockchain (e.g. Bitcoin, Ether, Binance Coin, Solana), while others use another infrastructure of blockchain (e.g. Tether, Uniswap, Polygon).

f) *Digital artwork.* A digital file of metadata. It typically includes the following elements for identification when converted to a non-fungible token (NFT): title, author, size, description, edition number, etc. (Garbers-von Boehm et al., 2022, p. 15; about digital artwork (see Sztermen, 2022).

g) *Distributed ledger technology (DLT).* Technology that enables distributed ledgers to function and use.[13] This technology uses a distributed, decentralised, shared and replicated ledger which can be public or private, permissioned or permissionless, or driven by tokenised crypto economics or token less. The data on the ledger is protected with cryptography, is immutable and auditable, and provides an uncensored truth.

h) *Intangible asset.* Assets that have an intangible form of representation but have an ideational and a market value. They directly serve the business activity for more than one year. Intangible means immaterial, non-material, intangible assets that are saleable, i.e. that represent an asset. Intangible assets are recognised by law for example as a form of fixed assets, next to tangible assets, financial fixed assets.[14]

i) *NFT.* It is a particular and encrypted unit of data on a digital ledger, typically a blockchain (Frye, 2021, p. 3). A cryptographic device with virtual or real content that uses blockchain to create a unique, non-replicable, fungible and tradable digital asset. A blockchain can be used for storage and registration, like a ledger found on the Internet. While cryptocurrencies such as Bitcoin, Ether, Solana, etc. are interchangeable, NFT is also interchangeable. They correspond to or represent (parts of) goods that are unique due to their characteristics, such as (digital or physical) works of art – or even real estate (Garbers-von Boehm et al., 2022, p. 13).

j) *P2P trading.* Peer-to-peer or person-to-person trading is a cryptocurrency exchange method that allows traders to trade directly with each other without the need for a third party or central intermediary to enter the transaction, either for registration or authentication. Instead of an automated engine, the online marketplace is a direct transaction after the product has been selected. There is more freedom to choose the needs, the exchange rate and the payment method, and the costs are lower. P2P platforms such as YouTube or UTorrent, which can be used for file sharing, often make illegal data, videos and files available to users, for example by causing copyright infringement.

k) *Smart Contract.* It is a computer program stored in an electronic ledger system wherein the outcome of the execution of the program is recorded on the electronic ledger.[15] A kind of computer protocol, which, by the application of blockchain technology, executes itself automatically, without the contribution of any other actor or intermediary (De Filippi & Wright, 2019, p. 33; Woebbeking, 2019, p. 107). The application of blockchain technology means that the transaction is automatically registered in a distributed

[13] Regulation (EU) 2022/858 of the European Parliament and of the Council of 30 May 2022 on a pilot regime for market infrastructures based on distributed ledger technology, and amending Regulations (EU) No 600/2014 and (EU) No 909/2014 and Directive 2014/65/EU, OJ L 151, 2.6.2022, pp. 1–33, Article 2(2).

[14] Act C of 2000 on accounting, Article 24(2).

[15] Proposal for a Regulation of the European Parliament and of the Council on harmonised rules on fair access to and use of data (Data Act), COM (2022) 68 final, Brussels, 23.2.2022, Article 2, point (16).

database. Thus, smart contracts are computer programs, linked to an electronic ledger that execute and settle transactions based on predefined conditions, since they transform the contract terms into computer code (Rohr & Wright, 2019, p. 473). These contracts which are independent from a central operator, guarantee the data owners and data recipients that the terms of data sharing will be respected (about the definition-making of smart contracts see Juhász, 2020).

l) *Tokenisation.* It is the process of transforming rights to tangible assets into tokens, i.e. the creation of digital analogues of real things. After this transformation, a token can act as an independent subject of civil transactions (Kulakova, 2022, p. 40).

3. Transferring the 'ownership' of digital artworks

In physical reality, the transfer of ownership of artworks takes place using property transfer contracts, sales, or, less frequently, gifts. However, it is common that before concluding the contract, i.e. the conclusion of the sales contract, the buyer is selected through a special competitive procedure (auction).

The issue of transfer of ownership of digital artworks raises several problems. The initial question is whether the digital artwork can be subject to ownership. If, according to civil law rules, a digital artwork cannot be included in the definition of the 'thing', then there can be no right of ownership on it, and therefore there can be no transfer of ownership. Answering this question is difficult: there are digital artworks that exist only in digital form, while others arose by the tokenisation of real physical objects, i.e. physically existing artifacts exist behind them. Thus, the NFT created in this way 'represents' the given asset in the virtual space and proves the ownership of that item (Kulakova, 2022, p. 42).

3.1. NFT digital artwork as the object of ownership

Regarding the NFTs including NFT digital artworks, it is necessary to answer the question of how an NFT can be interpreted: as a thing or as an embodiment of the right to dispose between different meta beings. Can the function of NFTs be deemed as a digital suitcase between metaverse objects?

Within the field of law in rem, 'thing' is one of the most fundamental concepts: it constitutes the indirect object of the legal relationship in rem, that is, what the direct object, the human behaviour is directed to. For this reason, the legislator must delineate the boundaries of the concept of thing within the framework of civil law, define what it considers to be a thing, and, because of this, what can serve as an indirect object of the legal relationship in rem. It should be noted, however, that the concept of a thing in the ordinary and legal sense is not the same: as a legal term, the thing serves to designate and define the object of rights in rem, so it has a narrower meaning than the concept used in everyday life (Juhász, 2023, p. 223).

According to Article 5:14(1) of the HCC, the object of ownership may be a physical object (thing) that can be taken into possession. However, paragraph (2) of the said article extends the rules on things to money and securities as well as to natural forces usable as things, while paragraph (3) provides for the appropriate application of the rules on things to animals, taking the provisions of acts establishing derogations reflecting their special nature into account.[16]

The possible revision of the boundaries of the concept of things delineated normatively by the legislature is a recurring issue of private jurisprudence. The concept of the thing described by the HCC is rather narrow and inflexible, which makes its application difficult regarding economic and social changes. The question of whether other private law 'phenomena' (e.g. intellectual property, corporate shares, bank account money, etc.) can be the subject of property law is repeatedly raised in the literature. Nowadays, the assessment of these phenomena is univocal: intellectual creations, regarding contemporary literary positions and judicial practice, do not qualify as things. Similarly, it can be stated about the share of a limited liability company that, although it is marketable and transferable as a set of intangible and pecuniary rights, it cannot be included in the category of things under the HCC. Bank account money, unlike cash in the form of banknotes and coins, is also not considered to be a thing.

Recently a new question arose: how to deal with the new phenomena emerging as a result of digitalisation (e.g. crypto assets, other digital assets, etc.) that cannot meet the criterion of possession required by civil law? The intensification of the digitalisation process, the emergence of artificial intelligence, the difficulties of placing the new phenomena into the civil law system, and the applicability of existing rules raise several new questions, to which the legislator will have to provide answers within the foreseeable future. The legislator shall provide about the legal status of digital data (Szilágyi, 2022a; Szilágyi, 2022b) and the private law treatment of crypto assets, in particular cryptocurrencies and NFT-based assets, which, however, cannot be given in the absence of regulation, solely based on different positions appearing in jurisprudence. Another question is whether the traditional conceptual framework may need to be revised, or expanded in any direction, or whether the current set of rules can be adapted appropriately to the new solutions.

In his recent study, Ákos Kőhidi (2022) outlined the classification of digital goods in virtual space in terms of property and contract law. Kőhidi referred to Christopher Cifrino, who presented three theories of property suggesting that the property rights of digital goods in the virtual world should be assessed based on the doctrines of contract law rather than property law. One of the theories introduced by Cifrino, based on the work of the English philosopher and political theorist, John Locke, is a theory of property that could provide a basis for property rights in virtual works since users of the platform spend hours acquiring an object. Cifrino (2014) also examines the scientific article of Margaret Radin (1982) with the title 'Property and Personhood', which argued the theory

[16] Cf. Act XXVIII of 1998 on animal protection (hereinafter referred to as APA). According to Article 5:30(1) HCC, the owner has the right to transfer or abandon ownership to someone else. On the other hand, Article 8 of the APA states that the ownership and keeping of animals kept in the vicinity of humans and dangerous animals may not be abandoned.

of regressive personhood, which addresses the relationship between persons and property in virtual worlds, is a theory that is not based on the contract alone.

As can be seen, determining the nature of NFT artwork is a difficult task. Nevertheless, according to the wording of the HCC, we have an opinion that *an NFT-based work of art cannot be regarded as a thing and therefore cannot be the object of property rights,* because such an artwork lacks spatial delimitation, physical appearance and the character of a 'corporeal object'. Instead of treating NFTs and NFT-based artworks as things, in our opinion, an approach that treats the NFT-based artworks as a kind of claim following the assessment of bank account money may be justified.

3.2. Transferring digital artwork in the metaverse

Traditional artworks which exist in physical form shall be deemed as 'things' according to the civil law rules, therefore, they can be the subject of ownership and the right of ownership can be transferred upon the provisions of property law. In the last decade, and especially after the Covid-19 pandemic, the transactions of artworks gradually moved to online space: artistic works change hands in the metaverse, on online auctions operated by different platforms.

Metaverses are online imitations of reality in which users participate in various activities and interact with each other using their virtual personalised avatars. The Metaverse, Web 3.0, and cryptocurrency are some of the emerging technologies that are transforming industries like gaming, online trading, cultural and educational work, and retail services. A lot of legal entities are developing their versions of their metaverse, e.g. the abovementioned Sotheby's, each with its unique set of network protocols, and cryptocurrencies. The crypto assets are used as means of exchange and store of value in these virtual worlds. Many metaverse blockchain projects are going on in the market which are constantly raising and competing for attention. Some of the top ones in 2023 are Decentraland (MANA), The Sandbox, Axie Infinity and Gala.

Recently, the trend of moving artwork auctions to online surfaces continued to strengthen particularly due to the appearance of NFT artworks, even if the nature of NFTs is currently unclear. In case of this category, transactions take place exclusively on online surfaces because of the nature of NFTs. On the one hand, sellers and buyers find each other on online marketplaces and can conduct their business directly. On the other hand, NFT artworks are offered for sale on online auctions organised by intermediaries like Christie's or Sotheby's or by others.[17] In 2021, Christie's was the first auction house that sold an NFT artwork and later, it hosted an NFT sale in Asia, accepting cryptocurrency, and taking live bidding in Ethereum,[18] even if they chose to conduct the bidding using their traditional online interface instead of on-chain at this time. Later, in Autumn 2022, the auction house launched the Christie's 3.0 platform[19] which allows it to carry out the entire auction

[17] Further details at https://superrare.com/; https://shorturl.at/JPW17; https://opensea.io/; www.niftygateway.com/; https://makersplace.com/

[18] Further details at www.christies.com/events/digital-art-and-NFTs/overview

[19] Further details at https://nft.christies.com/

process on the Ethereum blockchain. During this process, the bidder deposits an amount that fully covers his bid in a smart contract. On-chain auctions almost exclusively require bidding in native cryptocurrency, although there are some exceptions. (MakersPlace, for instance, allows one to make a bid either in cryptocurrency or in fiat money. In the latter case, a bid made in fiat currency will be converted into Ether in real time.) Besides Christie's, Sotheby's also developed its metaverse, launched in October 2021, where works of digital artists can be bought.[20]

4. Smart contract as a tool for the transfer of an NFT digital artwork

Increasingly, we hear the word 'artech' used to describe the possibility of using the latest technologies in the world of art, whether in the form of big data, software, or hardware. The one-way development of technology and art, their complementary nature, shows a one-way trend. Just as the digital world is gaining ground not only in imaging but also in commercial activities, smart contracts are helping the artech phenomena to achieve secondary market distribution. Big data and blockchain applied to art have grown into areas that are present in the focus of art lovers and potential future collectors.

The digital revolution has thus also reached the commercial activities of the art world. The storage and tracking of artworks' certificates, provenance and origin can be traced on a decentralised network. The benefits of non-replicable records in the form of metadata are that they can be used to store information about works of art in an authentic form, rather than having to keep or, where necessary, retrieve traditional paper documents. Authentic and complete authentication increases, and the value of the work of art and acts as an incentive for buyers. It also preserves the data of existing and NFT 'stamped' works, as well as newly created and NFT 'stamped' works. In this latter context, it is essential to set out some basic principles.

The tokenisation of digitally produced works, such as those produced with a digital camera or computer software technology, captured in digital space, which can be viewed on a device capable of displaying a digital image and managed in digital space, in the form of data that can be described as original and non-replicable, and which can be used and transferred, is a very useful and practical procedure for ensuring the marketability and transfer of ownership.

In case of NFTs, the token purchased is in fact a certificate of authenticity, which carries a link to the work and the owner's details. The image file itself is not delivered to the buyer, only a reduced version of the image is inserted into the user's cryptocurrency wallet. Crypto market stakeholders are working together to make the tokens more valuable over time. The secondary market for NFT artworks is also very strong, with 30% of SuperRare's turnover in April 2023, for example, coming from the resale of images. The smart contract stores the NFT token code, thereby implementing a record of the sale. There is no transfer of ownership of the underlying work in the traditional sense, only the

[20] Further details at https://metaverse.sothebys.com/

token, or the format of the command recorded in the smart contract, exchanges virtual ownership, whether tangible or intangible, which is unique to the token.

As already recorded in the first part of this paper, the NFT behind the digital artefact sold online is the heart of the sale. The tokenID is a smart contract, which is a combination of the smart contract that operates the NFT, describes it, and ensures its functionality as a tradable asset.

Smart contracts are used not only for transferring the NFT artwork but for making bids in an online auction. In those cases, where the online auction is carried out exclusively online, by using blockchain technology from the beginning to the end, on-chain bids are made in the form of a smart contract to guarantee the uniqueness of unchangeable transfer of ownership.

5. Regulating the operation of online auction platforms

As it was mentioned before, the nature of NFT is a central question from the point of view of civil law. However, these transactions take place *en masse* day after day regardless of whether NFTs are deemed as things or claims. Therefore, leaving this question aside, the online activity of auction houses and other intermediaries needs to be examined, since these are the surfaces where transactions on NFTs take place.

The operation of online platforms will be regulated in detail after the adoption of the DMA which aims to ensure the fair behaviour of the platforms. Although the trade of digital artworks represents only a quite narrow segment of the digital market, it gradually increases and due to the spread of NFTs these platforms can affect many users, therefore further examination may be justified.

5.1. Applicability of DMA provisions

According to Article 1(2) of the DMA, the provisions of the DMA shall apply to *core platform services* provided or offered by gatekeepers to business users established in the Union or end users established or located in the Union, irrespective of the place of establishment or residence of the gatekeepers and irrespective of the law otherwise applicable to the provision of service. In the application of the DMA core platform services mean online intermediation services, online search engines, online social networking services, video-sharing platform services, number-independent interpersonal communications services, operating systems, web browsers, virtual assistants, cloud computing services, online advertising services, including any advertising networks, advertising exchanges, and any other advertising intermediation services, provided by an undertaking that provides any of the core platform services listed before.[21]

However, it is a basic question, if the online activity of auction houses can fall under the category of core platform services, can it be met with either of the subcategories of core

[21] Point (2) of Article 2 of the DMA.

platform services? Regulation 2019/1150 of the EU[22] determines the criteria to which an online service shall comply to fall under the scope of core platform service. Under Article 2(2) of Regulation 2019/1150, such service shall constitute information society services within the EU rules,[23] and allow business users to offer goods or services to consumers, with a view to facilitating the initiating of direct transactions between those business users and consumers, irrespective of where the transactions are ultimately concluded, and the service provides to business users on the basis of contractual relationships between the provider of those services and business users which offer goods or services to consumers. That is, the term 'online intermediation services' covers several types of online activities such as online stores, video-sharing portals, app stores, social networking sites, online payment sites, etc. Considering this, *the online activity of auction houses and other platforms which enable online auctions and serve as a place for selling and buying NFTs* including NFT artworks *shall be deemed as an online intermediation service.* Therefore, these activities fall under the scope of the DMA, and the provisions relating to core platform services shall be applied to them.

5.2. Online auction platforms as gatekeepers?

There are some large platforms that shall be qualified as gatekeepers, due to their strong market position. For those DMA sets out special obligations.[24] Precisely, these platforms are digital ones that provide an important gateway between business users and consumers. From their position, they can grant power to act as private rule makers, thereby creating a kind of 'bottleneck' in the digital economy. Since the beginning of May 2023, DMA applies according to which companies provide *core platform services.* The ones considered so shall notify themselves to the European Commission that they do meet all the thresholds determined by the DMA. This mandatory notification shall be made without delay and in any event within 2 months after those thresholds are met; at the same time, the undertaking shall provide the European Commission with the relevant information. DMA determines detailed and objective criteria for these large platforms – core platform service providers – to qualify as gatekeepers.

According to Article 3 of the DMA, an undertaking shall be designated as a gatekeeper, if a) it has a significant impact on the internal market; b) it provides a core platform service that is an important gateway for business users to reach end users; and c) it enjoys an entrenched and durable position in its operations, or it is foreseeable that it will enjoy such a position in the near future ('emerging gatekeeper').

Relating to the above-mentioned three criteria, further examination is needed. On the one hand, there are expressions that shall be explained. According to point (27)

[22] Regulation (EU) 2019/1150 of the European Parliament and of the Council of 20 June 2019 on promoting fairness and transparency for business users of online intermediation services, OJ L 186, 11.7.2019, pp. 57–79.

[23] Cf. Point (b) of Article 1(1) of Directive (EU) 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services (codification), OJ L 241, 17.9.2015, pp. 1–15.

[24] Cf. Chapter III of the DMA.

of Article 2 of the DMA, 'undertaking' means an entity engaged in economic activity, regardless of its legal status and the way in which it is financed, including all linked enterprises, or connected undertakings that form a group through the direct or indirect control of an enterprise or undertaking by another. In criterion (b), business users and end users are mentioned. 'Business user' means any natural or legal person acting in a commercial or professional capacity using core platform services for the purpose of or while providing goods or services to end user, while 'end user' means any natural or legal person using core platform services other than as a business user.[25]

On the other hand, the term 'significant impact on the internal market' shall also be interpreted. The term reflects the economic strength of the given undertaking due to which it can impact the operation of the market. Nevertheless, instead of giving objective content to this term, the European legislator defines three cases, in which it shall be presumed that the given undertaking satisfies the three requirements mentioned above, and therefore shall be deemed as gatekeeper. These presumptions are based on quantitative factors, taking into consideration the turnover of the undertaking, the monthly number of end users, and the yearly number of business users.[26]

The above-mentioned presumptions also have relevance regarding the European competition law. While the economic strength of an undertaking shall always be examined under competition law rules to determine if an undertaking dominates the market, in the case of gatekeepers it is not necessary. When an undertaking is qualified as a gatekeeper based on either of the presumptions, there is no need for defining the relevant market and examining the market position of the undertaking and the effects of its conduct on consumer welfare.

As it was mentioned before, undertakings that meet all the thresholds determined by the DMA shall notify the European Commission thereof.[27] After the entry into force of the DMA, the deadline for the notification was 3 July 2023. It is remarkable that for this time, only seven large platforms, Alphabet, Amazon, Apple, ByteDance, Meta, Microsoft and Samsung notified the European Commission that they meet the thresholds to qualify as gatekeepers under the relevant provisions of the DMA. Another platform, Booking.com informed the Commission that it does not meet the thresholds yet but expects to meet the criteria at the end of 2023.[28]

Beyond the mandatory notification, the Commission has the right to designate a given platform as gatekeeper even if it does not meet the thresholds described in Article

[25] Points (20) and (21) of Article 2 of the DMA.

[26] Article 3(2) of the DMA.

[27] According to paragraph (68) of the preamble of the DMA, through mandatory reporting, gatekeepers should inform the Commission about the measures they intend to implement or have implemented in order to ensure effective compliance with those obligations, including those measures concerning compliance with the general data protection regulation of the EU [Regulation (EU) 2016/679], to the extent they are relevant for compliance with the obligations provided under these provisions, which should allow the Commission to fulfil its duties under this Regulation. In addition, a clear and comprehensible non-confidential summary of such information should be made publicly available while considering the legitimate interest of gatekeepers in protecting their business secrets and other confidential information. This non-confidential publication should enable third parties to assess whether the gatekeepers comply with the obligations laid down in this Regulation. Such reporting should be without prejudice to any enforcement action by the Commission at any time following the reporting.

[28] Further details at https://shorturl.at/jqKPV

2(2) of the DMA. This is only possible when the given platform meets each of the requirements of Article 2(2) of the DMA. In the course of this qualification procedure, the Commission takes different factors (e.g. the size of the undertaking, including turnover and market capitalisation, operations and position of that undertaking, structural business or service characteristics, etc.)[29] into consideration. Once a platform is qualified as a gatekeeper, Articles 6, 7 and 8 of the DMA provide for the obligations of the platform operator. The testing and qualification methodology described in the Annex may be updated and validated by the Commission considering current market developments.

After reviewing the criteria and procedure to qualify a given platform as a gatekeeper, we should answer the question of whether platforms enabling online auctions of digital artworks can be deemed as gatekeepers considering the quantitative and qualitative requirements determined by the DMA. Before answering, we should distinguish between platforms, which carry out auctions of different things including traditional and digital artworks (e.g. Opensea, Rarible, NBA Top Shop, Binance, VIV3, etc.), and those surfaces which organise auctions exclusively in the art sector (e.g. Super Rare, Nifty Gateway, Makersplace, KnownOrigin, Solanart, Async, Ronin). The transfer of an NFT digital artwork can take place in the same way on both platforms. Nevertheless, in the first case, the given platform reaches a larger number of end users or business users, therefore, it is more likely that it will meet the thresholds.

As we mentioned above, only seven large platforms notified themselves as gatekeepers until the deadline set by the DMA. Therefore, it can be stated that *online auction platforms enabling exclusively the transfer of digital artworks do not meet the thresholds determined by the DMA to qualify as gatekeepers.* Nonetheless, since the duty to notify the European Commission is an ongoing obligation of core service providers, it cannot be excluded that a digital artwork auction platform will meet the threshold sometime in the future. But not soon.

Another question, though, is how to assess when such a platform has met the threshold? Considering the criteria set out in Article 3(2) of the DMA, it shall be stated that both the turnover of an undertaking or the number of end users and business users can be assessed objectively since these have quantitative nature.

The monthly number of end users and the yearly number of business users can be determined relatively clearly since it is well-measurable by the different technical solutions. Nevertheless, buying and selling artworks either traditional or digital is a privilege of a quite narrow segment of society, therefore, presumably none of the platforms acting in the artwork market will meet the threshold to be qualified as gatekeepers.

Considering the other criterion, i.e. the turnover, it is obvious that the calculation of the turnover is more problematic. On the one hand, online auction platforms are operated by auction houses like Christie's and Sotheby's which, besides their online activity, still traditionally do their business when organising auctions with personal presence. For this reason, traditional and online sales of these auction houses shall be separated, because only online platforms providing core platform service fall under the scope of the DMA. Taking a step further, we should take into consideration that the sales taking place via online

[29] Cf. Article 2(8) of the DMA.

auctions are also different. There are auctions where bids can be made traditionally, off-chain, and in fiat currency, while there are other auctions, and this is an emerging trend of the above-mentioned auction houses, which pass off fully online, from the beginning to the end. In these cases, bids are made on-chain and, with a few exceptions, in cryptocurrency. In these cases, the calculation of turnover is complicated since the DMA set out the turnover threshold in EUR and does not contain any provision on the calculation of turnover. Nevertheless, it is presumable that the turnover can be calculated by the conversion of the given cryptocurrency to EUR.

6. Conclusory thoughts

To illustrate the above-mentioned problem, it is worth looking at the statistics on the sales of the largest auction houses Sotheby's and Christie's. According to the statistics, the total worldwide sales of auction house Sotheby's in 2022 reached approximately 8 billion U.S. dollars,[30] converted into euros this amount comes to EUR 7.3 billion.[31] Albeit the value of the total sales of Sotheby's shows that it could meet the thresholds set out by the DMA, it shall be mentioned that this value covers both traditional and online sales. According to another statistic,[32] the sales of NFTs on Sotheby's Metaverse show a gradually increasing trend and overall, from the launch of its Metaverse, the total sales of NFTs are nearly 18.7 million U.S. dollars, approximately 17 million euros. These latter transactions fully take place in the online sphere by using blockchain technology.

In 2022, the auction and private sales of Christie's generated approximately 8.41 billion U.S. dollars combined,[33] converted into euros this amount comes to EUR 7.6 billion. Within these sales, the company's online-only sales were 363 million U.S. dollars,[34] approximately 330 million euros.

As can be seen, calculating the turnover to assess if a given core platform service provider meets the threshold set out in the DMA is a complicated but not impossible task. Nonetheless, the number of sales of non-fungible tokens in the art segment shows an overall decreasing trend, therefore, it is unlikely that platforms selling exclusively NFT digital artworks would meet the thresholds soon.

[30] Further details at https://shorturl.at/fkIJQ
[31] All the above-mentioned sales were converted to euro on 10 July 2023.
[32] See www.statista.com/statistics/1282272/sotheby-s-metaverse-nft-sales-worldwide-by-auction/
[33] See www.statista.com/statistics/273256/revenue-of-christies-international/
[34] See www.statista.com/statistics/999436/christie-s-online-only-sales/

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