

Non-Fungible Tokens

Legal and Economic considerations – A European Perspective

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Introduction

NFTs - an acronym for non-fungible tokens - are tokens that represent a unique asset on a distributed ledger (e.g. a blockchain). The underlying type of asset can be both, natively digital (images, videos, digital authenticity information of a particular good – e.g. of a luxury watch – other type of digital content) or physical (paintings, cars or other tangible, real world assets). The token as such is a set of information recorded on a blockchain that represents the digital or physical asset. Once the NFT has been minted, it can become a proof of entitlement to the underlying asset (which however cannot be *per se* equated to the legal ownership over this asset) via the private key linked to the token.

Starting in 2017 with CryptoPunks² and within the same year the "going viral" of CryptoKitties³, NFTs have experienced a tremendous hype within the last year having its peak with the Beeple NFT "EVERYDAY: THE FIRST 5000" sold through a Christie's auction for \$69,346,250 in a single lot sale. Recently, one of the most popular platforms Opensea.io announced a transaction volume of \$3 billion for August 2021.⁴ Given these high volume of cash flows and transactions, it is more than necessary to assess NFTs on a more granular basis, in particular the legal and economic implications NFTs might have in the near future and whether there is a potential need for a "Call to Action" for regulatory bodies.

The aim of this working paper is to assess NFTs from a legal and economical perspective and provide an extensive but not exhaustive overview of the aspects to consider in this regard. It focusses in particular on current EU and German legal frameworks in force but which are however subject to ongoing regulatory changes and this paper shall therefore by no means be construed as an anywhere near final (legal or economic) assessment of NFTs.

1. Characteristics of NFTs and intellectual property rights

1.1 Main characteristics of NFTs

As explained in the introduction, NFTs can be generically described as cryptographic tokens representing a unique real world or digital asset, which, once created, can become a certificate

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² CryptoPunks launched the world's first marketplace for rare digital art in October 2017 on the Ethereum blockchain. Creators of the project showed 10,000 different cartoon characters for anyone with an Ethereum wallet to claim freely.

³ CryptoKitty are virtual cats breedable and having a unique number and 256-bit distinct genome with DNA and different traits which are passed onto their digital feline offspring. CryptoKitties raised \$12.5 million in investment in 2017.

⁴ Decrypt.co - *How NFT Giant OpenSea's \$3 Billion Month Compares to Amazon, eBay and Etsy*; available under: <https://decrypt.co/79789/opensea-3b-month-ethereum-nft-sales-amazon-ebay-etsy>.

of digital entitlement via the private key linked to the token. In order to differentiate NFTs from other tokens or digital assets, it is compulsory to highlight the key characteristics of an NFT.

In a nutshell, the main characteristics of a NFT is the non-fungibility and non-interchangeability of the unique, originally indivisible underlying asset (whether tangible or not) whereas the token itself is, from a mere technical point of view, in most cases transferable⁵.

Fungibility is generally understood as the ability of a good or asset to be interchanged with other individual goods or assets of the same type. An asset will likely be considered "fungible" if it is - quantitatively and qualitatively – replaceable, i.e. can be substituted with an identical asset. For instance, fiat money and cryptocurrencies are considered to be fungible due to the mere fact that they serve as a means of payment: one Euro or Bitcoin can be replaced by another Euro or Bitcoin and still have the same value. In contrast, a physical painting on canvas is a unique piece as there exists no other identical painting. Indeed, the painting may be duplicated and copied but every duplication or copy will likely be considered as a new (unique) asset. Thus, an asset can be considered to be "non-fungible" if it cannot be exchanged for precisely the same amount of the same type because its uniqueness and different characteristics.

Tokenization also allows for fractionalization. This means in particular, that an asset that is naturally not divisible may be fractionalized by way of tokenization, i.e. the NFT representing the asset is in itself fractionalized into numerous parts (so-called "fractionalized NFTs"). The fractional parts of an NFT could be considered not to be unique if they do not represent a particular piece of that asset and thus "fungible" (however to a limited extent) which may have an impact on the legal classification from a regulatory perspective.

1.2 NFTs with digital underlying assets from an intellectual property perspective

Intellectual property rights bestow the owner of an intellectual work with rights to protect such work i.a. from use and commercialization by third parties. An NFT as a digital asset is not a type of intellectual property right in itself. It is rather a certificate of authenticity such that it verifies – designed and intended to be tamper-proof – that the owner of the NFT is the owner of and has access to a unique digital piece of work written on the NFT which might be protected by intellectual property as well as the transaction history of such ownership.

"Unique" in this case does not mean that the digital work on the NFT only exists once. The digital work which is written on the NFT may be the first and only piece of the relevant work (as one might understand "unique"); it may, however, also be a reproduction of a certain piece of work. In both cases, the NFT "uniquely" traces back to a file containing or linking to the information making up the digital tokenised content .

a) What – if any - rights does the "owner" of an NFT acquire?

Taking German law as an example legal framework, the author of a work, whether physical or digital, owns the intellectual property rights and copyrights in the created work. As such, the author as the owner of those rights, is exclusively entitled to use and exploit the work at their sole discretion. Such exclusivity for use and exploitation includes the rights to reproduce, modify and distribute the work and make it publicly available. It is also the author's exclusive

⁵ There exist however certain types of token standards that prohibit a token transfer (e.g. ERC 1238), also called "non-transferable token" or "NTTs").

right to decide whether and to what extent to grant third parties rights of use in the created work.⁶

The German legal framework distinguishes between the set of rights the purchaser of such work acquires (or not)⁷: On the one hand, there is the ownership right in the work which the purchaser acquires. For example, the purchaser of a photograph or a painting will become the owner of the physical work itself. On the other hand, there are the different underlying rights of use in the work inherent to the copyright owner⁸ which, as mentioned above, include the right of reproduction or modification of the work. In contrast to the ownership right, generally, the purchaser of a piece of work does not acquire any rights of use in such work unless this is agreed between the copyright owner or the holder of the rights of use respectively.⁹

While the purchaser of a photograph or painting may resell the work – this is covered under the exhaustion of the author's rights as provided for in the Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonization of certain aspects of copyright and related rights in the information society – the purchaser might not automatically acquire, for example, the rights to reproduce the work; in the absence of a contract it would rather need to be interpreted whether and what rights of use were granted.¹⁰ The aforementioned principle is a statutory presumption in case legal interpretation principles cannot ascertain whether the parties have agreed to the granting of specific rights of use in addition to transfer of ownership.¹¹

As NFTs are a new technological way to transfer and give access to intellectual property right protected works, the question is what rights of use in the copyright protected work (if any) the owner of an NFT actually acquires. While the owner of the NFT is granted access to the work, such as the owner of a physical work has access to the purchased work – if we apply the existing laws to NFTs – absent any agreement with the copyright owner, it might need to be interpreted which rights the purchaser might have acquired and the purchaser might not automatically acquire specific rights of use, such as reproduction or modification of the work. This question already becomes relevant when it comes to the right to resell the NFT as the exhaustion principle might not be applicable since Art. 4 of Directive 2001/29/EC refers to “objects” and an NFT as a digital asset would not be deemed an “object”. Also, following a ruling of the CJEU, an e-book cannot be resold without the copyright owner's consent excluding the application of the exhaustion principle for e-books¹² and suggesting that the resale of all digital copyrighted works are subject to consent requirements. While an interpretation might lead to the result that the seller and purchaser of an NFT might have intended to allow the resale, various uncertainties remain.

The distinction between ownership rights and rights of use in the copyright protected work exclusive to the copyright owner is a material aspect of NFT transactions and that purchasers should be aware of. If the purchaser of an NFT intends to acquire more than just access to the digital file, a separate agreement should be concluded with the copyright owner in any case

⁶ For the author's rights see i.a. Section 15 and Section 31 of the German Copyright Act.

⁷ See *Ahlberg/Götting/Lauber-Rönsberg*, Beck Online Commentary to the German Copyright Act, § 44, recital 1, 31st Edition 2021.

⁸ *Wandtke/Bullinger*, Legal Commentary to the German Copyright Act, § 44, recitals 1 and 2, 5th Edition 2019, with regard to the distinction between ownership rights and rights of use.

⁹ Section 44 of the German Copyright Act.

¹⁰ See Section 31 para. 5 of the German Copyright Act.

¹¹ *Schricker/Loewenheim*, Legal Commentary to the German Copyright Act, § 15, recital 14, 6th Edition 2020.

¹² Case C-263/18 of the Court of Justice of the European Union – *Tom Kabinet*

which sets out the specific rights of use in order to avoid any unclarities or having to interpret the parties' intention.

b) Who has the right to issue (mint) NFTs?

Minting is the process of the virtual asset becoming part of the blockchain. The digital work is represented as an NFT so it can be purchased and traded.¹³

The question as to who has the right to create NFTs depends on how the creation is characterized legally – which is currently not certain. If an NFT of a digital work is created, the creator of this NFT might be deemed to be reproducing the work. Or, creating an NFT could be deemed a public display of the work. Both are types of use which are exclusively vested with the author.¹⁴

Thus, if the creation of an NFT on which a copyrighted work is written is deemed to be a type of use of the work which by statutory laws is only granted to the author of the work (copyright owner), a third party could only do so if such rights were granted by the author.

While NFTs can prove authenticity of ownership in the token they cannot prove that the creator of the NFT has the right to create it. Simply put: An NFT cannot prove that the digital art is created by the author as claimed or whether it is a (non-authorized) reproduction of such art by a third party.

c) Actions against unauthorized use

As for anti-counterfeiting measures, in consequence, the existing anti-counterfeiting measures that are provided to the author of a physical work would need to be equally provided to the author of a digital work if the creation and sale and trade of NFTs are deemed types of use inherent to copyright. I.e. if someone does not have the right to create an NFT of a piece of work, such person would be infringing copyright by creating the NFT and selling it and the author or holder of the rights of use in the relevant work, respectively, could then assert different claims against the creator of the NFT. Especially cease and desist claims from preventing the minting of the NFT and consequently, its sale and trade. Another measure especially includes damages claims while different methods can be applied to calculate the respective damages.¹⁵

d) Outlook

Various questions remain open such as whether and what type of rights of use the parties may have intended to agree upon with the sale of an NFT even if no specific agreement was concluded and how the process of creating an NFT is characterized legally. It remains to be seen how the courts will solve these questions. It is also apparent that in practice, it is highly advisable to establish the attribution of IP rights with legal certainty in a framework documentation governing the NFTs.

¹³ Online article “A complete guide to minting” by Samantha Ayson: <https://help.foundation.app/en/articles/4742869-a-complete-guide-to-minting-an-nft>

¹⁴ See Section 15 para 2 and Section 16 of the German Copyright Act.

¹⁵ See Section 97 ff. German Copyright Act for the author's claims.

2. European legislation and taxonomic considerations

2.1 Markets in Crypto Assets Regulation (MiCAR)

On 24 September 2020, the European Commission announced its "digital finance package", including a legislative proposals for a Markets in Crypto Assets Regulation (MiCAR)¹⁶.

MiCAR introduces a new, independent definition of "crypto-assets" that shall broadly mean *a digital representation of value or rights which may be transferred and stored electronically, using distributed ledger technology or similar technology*. Deviating from other concepts of token classification models, MiCAR distinguishes between three types of tokens: e-money tokens¹⁷; asset-referenced tokens¹⁸ and crypto assets¹⁹ as a catch all clause. The latter also includes so-called "Utility Tokens", which are generally understood as a sort of digital voucher enabling the token holder to access a certain service or product without having any financial purpose.²⁰ NFTs that provide its holder access to a specific service or product, for example a music or video stream, i.e. where the NFT serves as a "digital key" for access, may qualify as a Utility Token under the current draft MiCAR and thus, as a crypto asset pursuant to Art. 3 (1) no. 2 MiCAR. Additionally, the mere fact that Utility Tokens (currently) fall within the ambit of MiCAR could be taken as an implication that even digital assets that do not have a financial purpose (such as most NFTs) shall however be regulated as the European legislator may associate certain risks with these type of digital assets.

The current draft MiCAR provides for an exemption as regards the requirements to draw up and publish a crypto-asset white paper for those crypto assets that are unique and not fungible with other crypto-assets.²¹ Still, this exemption applies to crypto assets as defined by Art. 3 (1) no. 2 MiCAR and can therefore not be taken as an ultimate answer to the initial question whether NFTs can be classified as crypto assets under MiCAR. However, it implies that uniqueness and non-fungibility is not regarded as a "reason for exclusion" from the entire scope of MiCAR by the European legislator.

In sum, it is currently not entirely clear whether NFTs fall in scope of the current draft MiCAR given the broad definition of crypto assets. However, there has been strong market resonance during the consultation phase that NFTs should be carved out from the scope of MiCAR. Market rumors indicate that the crypto asset definition will be narrowed in the sense that crypto assets that are unique and not fungible with other crypto assets will be entirely carved out from

¹⁶ Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937; available under: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020PC0593>.

¹⁷ Pursuant to Art. 3 (1) no. 4 MiCAR, "electronic money token" or "e-money token" means a type of crypto-asset the main purpose of which is to be used as a means of exchange and that purports to maintain a stable value by referring to the value of a fiat currency that is legal tender.

¹⁸ Pursuant to Art. 3 (1) no. 3 MiCAR, "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.

¹⁹ Pursuant to Art. 3 (1) no. 2 MiCAR, "crypto-asset" means a digital representation of value or rights which may be transferred and stored electronically, using distributed ledger technology or similar technology.

²⁰ Cf. Rec. 9 MiCAR. More precisely, MiCAR defines Utility Tokens as a type of crypto-asset which is intended to provide digital access to a good or service, available on DLT, and is only accepted by the issuer of that token (Art. 3 (1) no.5 MiCAR).

²¹ Rec. 15 MiCAR.

the scope of MiCAR.²² Within its Digital Finance Strategy the European Commission constantly emphasises that it would follow the principle "same activity, same risk, same regulations".²³ Consequently, the new draft of MiCAR should reflect this principle with regard to NFTs.

2.2 MiFID II

Given that MiCAR is still under draft and will likely not come into force before 2022, it is compulsory to take a closer look if and how NFTs may fall under current EU legislation.

One of the basic pillars of EU financial regulation is Directive 2014/65/EU, commonly known as "MiFID II", which is not only itself a complex regulatory framework for certain types of financial instruments and services/activities but does also serve as a linking point for other EU financial directives and regulations.

"Financial instruments" are defined in Article 4(1)(15) of MiFID II as those "instruments specified in Section C of Annex I." These are, inter alia, "transferable securities", "money market instruments", "units in collective investment undertakings" and various derivative instruments. With regard to the classification of NFTs, the most forced and discussed question in the market is whether NFTs qualify as securities within the ambit of MiFID II as this would result in vast regulatory requirements and obligations not only for the issuer but likely anyone who is offering (ancillary) services, e.g. trading platforms, etc.

"Transferable securities" under Article 4 (1) (44) of MiFID II, means those "classes of securities which are negotiable on the capital market, with the exception of instruments of payment, such as: (a) shares in companies and other securities equivalent to shares in companies, partnerships or other entities, and depositary receipts in respect of shares; (b) bonds or other forms of securitised debt, including depositary receipts in respect of such securities; (c) any other securities giving the right to acquire or sell any such transferable securities or giving rise to a cash settlement determined by reference to transferable securities, currencies, interest rates or yields, commodities or other indices or measures".

The qualification of a digital asset as a security within the aforementioned meaning generally results in the obligation of the issuer - in case of a public offering - to publish a prospectus alongside the requirements of Regulation (EU) 2017/1129²⁴ (commonly known as the "Prospectus Regulation"). Further, any services and/or activities in relation to such "security token" must be assessed against the those services and activities listed in Annex I of MiFID II.

Whether a digital asset or a NFT qualifies as a security and thus, as a financial instrument within the ambit of MiFID II depends on its specific structure and the rights attached to it.

²² Cf. EU Blockchain Observatory and Forum - NFT – Legal Token Classification, p. 4; available under: <https://www.eublockchainforum.eu/sites/default/files/research-paper/EUBOF%20-%20NFT%20-%20Token%20Classification%20Latam.pdf>.

²³ European Commission – Press release: Digital Finance Package: Commission sets out new, ambitious approach to encourage responsible innovation to benefit consumers and businesses; available under: https://ec.europa.eu/commission/presscorner/detail/en/IP_20_1684; https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/210202-call-advice-esas-digital-finance_en.pdf.

²⁴ Regulation (EU) 2017/1129 of the European Parliament and of the Council of 14 June 2017 on the prospectus to be published when securities are offered to the public or admitted to trading on a regulated market, and repealing Directive 2003/71/EC Text with EEA relevance.

A NFT which merely serves as a pure digital representation of one underlying asset will likely not meet the definition of a transferable security because it is not fungible and changeable due to the uniqueness of the underlying asset. However, given that the market currently has a quite broad understanding of NFTs, it must be assessed case-by-case whether the NFT in question falls outside the scope of MiFID II and other European regulations and/or directives. This applies in particular to fractionalized NFTs as they may be regarded as fungible. Depending on the right linked to these fractionalized NFT, they may already qualify as transferable securities within the ambit of MiFID II.

3. Economic considerations

In order to achieve a comprehensive understanding of NFTs and to potentially develop a proper and smart regulation it is also important to take a closer look on the economic implications NFTs might have in the near future, in particular on the financial market and financial stability.

In May 2019, the European Central Bank (ECB) issued a "Occasional Paper"²⁵ which summarises the outcomes of the analysis of the ECB Crypto-Assets Task Force and proposes a characterisation of crypto-assets (in the absence of a common definition and as a basis for the consistent analysis of this phenomenon), analyses recent developments in the crypto-assets market and unfolding links with financial markets and the economy and finally assesses the potential impact of crypto-assets on monetary policy, payments and market infrastructures, and financial stability.

In the Occasional Paper, the ECB defines crypto assets as "*a new type of asset recorded in digital form and enabled by the use of cryptography that is not and does not represent a financial claim on, or a liability of, any identifiable entity*".²⁶ It is important to note that this definition given by the ECB in the paper is not "binding" as such but only used for the purposes of the Occasional Paper and any conclusions in the paper are to be interpreted in relation to crypto-assets as defined therein.

With regard to the legal classification, the ECB clearly states that crypto-assets would not qualify as electronic money within the ambit of the Second Electronic Money Directive (EMD2)²⁷, to the extent that they are not and do not represent a claim on the issuer. Further, a crypto-asset shall not qualify as a financial instrument, as listed in Section C of Annex 1 of MiFID II as that would typically represent a financial liability or equity on the side of some issuer.

According to the ECB, in absence of any specific institution (such as a central bank or monetary authority) protecting the value of crypto-assets hinders their use as a form of money, since their volatility: a) prevents their use as a store of value; b) discourages their use as a means of

²⁵European Central Bank: Occasional Paper Series Crypto-Assets: Implications for financial stability, monetary policy, and payments and market infrastructures (**Occasional Paper**), available under: <https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op223~3ce14e986c.en.pdf>.

²⁶ The ECB clearly distinguishes between the infrastructure layer, where distributed ledger technology (DLT) underpins crypto-assets as one of many possible use cases, and the asset layer (which is the sole focus of the analysis outlined in the Occasional Paper).

²⁷ 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.

payment; and c) makes it difficult to use them as a unit of account, which leads to the conclusion by the ECB that crypto-assets are not to be considered as virtual currencies or digital currencies.

At the current stage, the ECB does not see significant implications resulting from crypto assets for economic developments and the monetary policy which is notably also in line with the Basel Committee on Banking Supervision (BCBS).²⁸

In the Occasional Paper, the ECB concludes that in the present market conditions, crypto-assets risks/implications for financial stability, monetary policy, and payments and market infrastructures are limited and/or manageable within the current framework. They would not effectively compete against cash and deposits so that their implications for economic developments and monetary policy are similar to those of other asset markets. However, the ECB emphasizes the importance of continuing to monitor the crypto-assets phenomenon, raise awareness and develop preparedness for any adverse scenarios, in cooperation with other relevant authorities.

Finally, the ECB acknowledges that crypto-assets currently pose risks mostly with regard to money laundering/terrorism financing and consumer protection. In similarity, the global standard setter in relation to AML, the Financial Action Task Force (FATF), seems to recognize that also NFTs may create the risk of money laundering or terrorist financing so that there is a reason to regulate them²⁹.

Overall, the ECB's conclusion is based on the assumption that the crypto asset sector remains (still) small and that their linkages to the wider financial system remain limited. This conclusion raises insofar significant doubts given that at the current global crypto market cap amounts in 1.66T Euro from which the NFT market cap is currently around 24 Bio. Euro.³⁰ Compared to other assets this may for the time being still be a lower amount. However, given that NFTs are playing more and more a significant role in decentralized finance and the fact, that stablecoins, which seem to be in a special focus not only by the ECB but also the European Commission, may be backed by NFTs in near future³¹, ongoing market monitoring and re-evaluation is necessary in order to determine any potential risks particularly for the financial stability and monetary system of the EU.

With regard to the economic implication of NFTs the ECB Occasional Paper provides limited guidance as it is not clear whether NFTs would – from the ECB's perspective – qualify as crypto assets as defined in the Occasional Paper. Given that the definition of crypto asset is quite broad, it could arguably also include NFTs. Notably, the ECB however clarifies that the mere digital representations of existing assets referred to as "tokens", which allow recording these assets by means of a different technology are not in scope of ECB's definition of crypto assets and that the same technology-neutral rules and legal provisions shall therefore apply, to the extent possible, to the issuance, bookkeeping and use of these "tokens" as they apply to the financial assets they represent. Conversely, with regard to NFTs it could be argued that if the underlying

²⁸ Basel Committee on Banking Supervision - Discussion paper: Designing a prudential treatment for cryptoassets, dated December 2019, available under: <https://www.bis.org/bcbs/publ/d490.pdf>.

²⁹ <https://digital.freshfields.com/post/102gw07/non-fungible-tokens-a-case-for-german-or-european-financial-regulation>.

³⁰ <https://coinmarketcap.com/>.

³¹ Collateralized NFTs and Stablecoins: Solving Decentralized Finance; available under: <https://medium.com/stably-blog/collateralized-nfts-and-stablecoins-solving-decentralized-finance-233f7e6964b8>.

asset is not a financial asset, the NFT being a mere digital representation of it would not fall in scope of crypto assets as defined by the ECB.

4. NFTs developments and valuation

While tangible artworks like the Mona Lisa or physical collectibles like NBA player cards have defined values, the valuation of NFTs as a new type of investment may be an evolving and challenging area, in particular from an investor's perspective. In addition, the valuation of a NFT (whether fractionalized or not) is becoming more important as NFTs as such are playing more and more significant role in decentralized finance (DeFi) as they already serve as collateral within collateralized loans.

In general, it could be argued that NFTs don't have the same liquidity as other investment products such as shares or investment funds as there is, for the time being, no market comparable to other common investment products, in particular due to its intrinsic nature of being a unique representation of a physical or digital asset, right, etc. To have a highly liquid NFT market, it is imperative to have persons or entities constantly willing to purchase and sell.

First, the challenges in connection with the valuation of an NFT may be caused by the persistent uncertainty about their economic and legal nature. Further, the particular valuation factor also depend on the individual characteristics of that NFT such as e.g. if the asset or right may be licensed or whether any royalties are linked to the NFT in question. In particular, the rarity, utility as well as tangibility of an NFT might serve as evaluation criterions.

Examples of rarity, i.e. how rare and "hard-to-get" a specific NFT are first-of-its-kind artwork from a famous creator in the real world or digital arts industry, or an NFT created by a famous celebrity. Solid examples of the unique effect in the crypto industry are the first CryptoKitties, Everyday - The First 5000 Days by Beeple and others.

Unlike collectibles, the utility of an NFT derives from its real application, in either physical or digital worlds. For instance, some NFTs can be used in games, like virtual lands, spells, or characters. This characteristic of NFTs gives them immediate value, which accrues over time depending on the popularity of the underlying project. For example, as the community of a decentralized game's players grows, more of them will be willing to pay top dollar for a unique card.

As regards tangibility, some NFTs are tethered to real-world objects, which gives value in terms of tangibility backed by ownership immutability. In essence, anything can be backed by an NFT to solidify ownership rights, but that does not make the object unique or high-demand. The underlying value of such an object will be determined by its practicality, scarcity, and the personal satisfaction it gives users, such as an NFT ticket to an exclusive event full of celebrities is considerably more valuable, both intrinsically and on a personal level, than owning an NFT tethered to a bottle cap. However, from an investor's perspective, such NFTs will likely be rather a short term investment as they will have expiry dates, like tickets. Meanwhile, other collectibles like NFT-tethered limited edition sneakers can accrue value over time as the number of items in circulation dwindles.

Another approach could be taken if employing traditional valuation approaches according to the so-called "valuation theory"³², in particular the income approach, the asset approach, and the market approach. All three approaches may serve as appropriate means to determine the

³² <https://gabb.org/business-valuation-theory-and-practice-part-one-valuation-approaches/>

fair market value of an NFT or the NFT-holding entity, however still considering the specific nature and characteristics of NFTs.

Generally, the income approach quantifies the present value of anticipated future income generated by a business or an asset. Forecasts of future income require analyses of variables that influence income, such as revenues, expenses and taxes. With regard to the income of an NFT, variables to be considered may be for example any royalties linked to the NFT or any licenses connected with the particular NFT.

The asset-based approach can be described as identifying a company's net assets by subtracting liabilities from assets. The asset-based valuation is often adjusted to calculate a company's net asset value based on the market value of its assets and liabilities. With regard to the valuation of NFTs for example by an entity holding an NFT in its balance sheet, the asset-based approach may be challenging due to the specific characteristics of NFTs. In this regard, it could first be relied on the fair market value of the underlying asset. For instance, the price of a canvas painting from an artist may be compared to the price of another painting from the same artist. However, the NFT market shows that the fair-market- value or the price, respectively, of a physical asset may not equal to the price of the NFT. In addition, the valuation of an NFT by employing the asset-based approach may become more challenging when it comes to digital content, rights, etc.

The market-based approach is a valuation method generally used to find the value of a business or asset by comparing it to other similar businesses assets sold recently. Due the fact that the NFT market is still developing and thus, at an early stage, it is already questionable whether this valuation method is appropriate and in particular reliable.

The valuation of a NFT does also require to consider the risks associated with digital assets in general. These risks include general IT risks, security, fraud, and accounting controls, along with unique controls over wallets and digital transactions. In addition, the lack of further guidance by regulating bodies if and how NFTs are or will be subject to future regulation must be taken into account.

5. German supervisory law implications

Germany is one of the first EU jurisdictions that introduced a definition of "crypto assets" under its financial regulatory law, i.e. the German Banking Act (*Kreditwesengesetz –KWG*). Moreover, Germany has just recently enacted a new law for electronic securities which also includes for the first time crypto securities³³. In addition, from August 2021 certain types of German special alternative investment funds are allowed to invest 20% of their assets in crypto assets. It is therefore worth to assess more granularly if and how NFTs might already fall under existent German regulatory law.

³³ At the current stage however only bearer bonds.

5.1 Crypto Assets

By transposing the provisions of Directive (EU) 2018/843³⁴ into national law, the German legislator amended the KWG and introduced a definition of crypto asset as a new category of financial instrument.

According to Sec. 1 (11) sent. 4 KWG, a crypto-asset is a digital representation of value which has neither been issued nor guaranteed by a central bank or public body, does not have the legal status of currency or money but, on the basis of an agreement or actual practice, is accepted by natural or legal persons, as a means of exchange or payment or serves investment purposes and that can be transferred, stored and traded by electronic means.

While this new type of financial instrument is still subject of legal discussions, which is predominately caused by the very technical aspects to be considered when employing this definition, the German legislator however already gave at least some guidance which type of tokens shall fall within the ambit of Sec. 1 (11) sent. 4 KWG. According to the Explanatory Memorandum to the AMLD Transposition Act³⁵, the definition of crypto asset shall, besides payment tokens (e.g. Bitcoin, Ether etc.), cover tokens with an investment purpose, in particular Security/Investment Tokens, units of investment funds and other types of investment products under the German Capital Investment Act (*Vermögensanlagengesetz* - **VermAnlG**).

The fungibility as such is not explicitly mentioned as a prerequisite for crypto assets under the KWG, respectively. Further, taking into account that the fungibility of certain types of investment products under the VermAnlG is quite limited, may be taken as a further indication that a non-fungible digital asset may fall within the ambit of Sec. 1 (11) sent. 4 KWG. Thus, it could be argued that any NFT, that has an "intrinsic investment purpose" may be classified as a crypto asset and thus, as a financial instrument under the KWG. However, it remains still uncertain how to determine the "tipping over point", i.e. when a pure digital representation of e.g. a sneaker "tips over" to an asset with an investment purpose in a legal sense.

In sum, whether NFTs qualify as a crypto asset under the KWG depends, amongst others, on the specific nature of the NFT in question and its particular features linked to it. There are valid arguments that a pure "digital-to-digital" NFT (e.g. a tokenization of a natively digital piece of art) does not have an intrinsic investment value and accordingly does not even fall under the unique definition of crypto asset according to the KWG and is - as consequence - , a financially unregulated instrument.

5.2 Units of Account

Deviating from the definition of financial instrument within the ambit of MiFID II, the KWG provides for a unique German financial instrument that is not based on EU law called "unit of account" (*Rechnungseinheit*).

In its guidance dated 19 December 2013 , the German Financial Supervisory Authority (*Bundesanstalt für Finanzdienstleistungsaufsicht* – **BaFin**) clarified that a classification of a payment token as a unit of account is only possible where the instrument is similar to foreign

³⁴ Directive (EU) 2018/843 of the European Parliament and of the Council of 30 May 2018 amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, and amending Directives 2009/138/EC and 2013/36/EU.

³⁵ Explanatory Memorandum to the Act on the Transposition of Amending Directive to the Fourth EU-AML Directive (Directive (EU) 2018/843) (**Explanatory Memorandum to the AML Transposition Act**).

currencies and not of legal tender. They include value units having the function of private means of payment in barter transactions, as well as any other substitute currency used by virtue of private-law agreements as a means of payment in multilateral settlement accounts. This makes a central issuer obsolete. BTC are not e-money within the meaning of the German Payment Services Supervision Act (*Zahlungsdiensteaufsichtsgesetz – ZAG*) because there is no issuer establishing claims against himself by issuing BTC.

Where NFTs do not serve as means of payment but as a mere digital representation of an underlying asset, they should not qualify as unit of accounts within the ambit of the KWG.

5.3 Investment Product / Investment Funds

Certain financial instruments which do not fall within the ambit of MiFID II or the German Capital Investment Code (*Kapitalanlagegesetzbuch - KAGB*) may however be covered by the VermAnlG which provides for a regulatory framework for investment products which either grant the investor participation in a company's profits, or which grant participation in assets held or managed by the issuer or a third-party on its own behalf for the account of a third party (trust assets - *Treuhand*), or for units in other closed-end funds that are offered to the public in Germany, or which grant participation rights (*Genussrechte*) or which constitute registered bonds (*Namensschuldverschreibungen*).

Investment products are financial instruments pursuant to the KWG and any commercial dealings which such products may therefore trigger authorization obligations, if the business activities of the involved provider qualify as banking business or as a financial service pursuant to the KWG.

Further, the issuer of an investment product is generally required to issue an prospectus in accordance with Sec. 6 VermAnlG. However, with regard to tokenized investment products BaFin follows the so-called "substance over form" approach and qualifies these tokens as securities as this type of token represent a security class of their own (*sui generis*) because they have been converted into investments which can be traded on the financial market by tokenization.

Depending on the specific features in the individual case certain NFTs may (already) fall within the ambit of the VermAnlG.

Depending on the structural set-up in particular in case of fractionalized NFTs representing real world assets (such as real estate tokenization for example), related investment structures e.g. involving an SPV / trustee to formally acquire the *in rem* position in the underlying asset to be tokenized must also be carefully assessed under the rules governing investment funds as contained in the KAGB.

Taking the above into account, from a German supervisory law perspective **no definite regulatory classification can be made at present due to the different types of NFTs and the lack of further guidance given by the German legislator and BaFin**. It remains further unclear what implications for the German law and the administrative practice of BaFin will result from MiCAR.

Notably, the German government recently stated that:

The issuance, purchase, sale, management or brokerage of NFTs is de lege lata regularly not subject to approval as a banking transaction or financial service pursuant to Section 32 (2) KWG. However, it cannot be ruled out that derivatives with NFTs as underlyings, e.g. through

secondary sales of shares, may, depending on their contractual structure, be classified as financial instruments under Section 1 (11) KWG and thus fall within the scope of Sec: 32 (1) KWG; the lack of interchangeability of the individual NFT is neither a guarantee that non-tradable financial instruments will be created on its basis in the future nor can it be ruled out that, with the appropriate contractual arrangement, NFTs may be classified as asset investments. This would also lead to a classification as a financial instrument pursuant to Section 1 (11) KWG.

6. Conclusion

From a financial regulatory perspective, it is for many types of NFTs not possible to classify them with legal certainty. Under EU law and national law gold-plating EU law, they may qualify as financial instruments, going forward EU law crypto assets or may be unregulated altogether. The highest degree of legal uncertainty exists in the case of a tokenization of natively digital assets such as digital art. The regulatory classification is however important as it is the basis for assessing whether selling / trading in them is a regulated activity requiring authorization and whether a prospectus regime is applicable.

The underlying intellectual property in a work is a value factor which the parties should be mindful of in this new class of asset. The legal characterization of NFTs from an intellectual property perspective is decisive in assessing the various rights that may (or may not) be attached to an NFT and the current legal framework does not address all intellectual property issues in regard to NFTs, their issuance and their trade. From a contractual perspective, given the uncertainties, seller and purchaser to an NFT transaction should also agree on a contract which governs the allocation of intellectual property rights, including the relevant rights of use. Such an agreement could also take the form of general terms and conditions of the tokens.