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## CHAPTER 1. INTRODUCTION

The rapidly evolving trend of tokenization, which can be described as the process of digitalizing assets or rights on a distributed ledger- such as a blockchain- includes also the Non-Fungible Tokens.

While Non-Fungible Tokens have made their appearance in the digital field approximately a decade ago, only recently they gained exposure and attention. However, despite the growing interest, there still exists a wide spread lack of understanding of their nature.

As with the development of the NFTs also new ownership and monetization models are emerging, a significant impact on many industries is to be expected. Following and understanding the background and history of the NFTs can contribute to a clearer analysis of the trend of development of this items and thus give the ability, to a certain extent to make at least rough (estimations) on the future development of the digital space.

Before the recent increase in the use of NFTs, the fact that producing copies of digital creative works without any degradation in quality was not difficult made it problematic for digital creators to profit fully from the revenue that could have been generated through their works. The emergence of NFTs came as a solution to this problem, as they ensure the unicity and authenticity of the item that they represent, additionally allowing the creator to perpetuate the scarcity of the assets, by this also increasing the NFTs value. Furthermore, 'NFTs provide for the improved ease of transferring digital creative assets over traditional sales models since NFTs can be sold

on any NFT market or peer to peer, without the need for an intermediary, rather than being restricted to the use of third-party platforms to distribute content.’<sup>1</sup>

One factor that can present itself as both an advantage and a disadvantage for the NFTs creators., that being the public access to viewing NFTs (in other words, NFTs being available for the public view on various public NFT platforms). While it can be useful for copyright owners to identify potential unauthorized reproductions, it does contribute to the effort of monitoring for any infringement, merely by widening the range of platforms on which a potentially unauthorized work could be published.

As a positive note in regards to the current international state of artists’ resale rights, while largely unregulated, the minting and sale of NFTs are highly accessible to an international audience. Considering the decades-long US disputes over artists’ resale royalty rights (known as *droit de suite*), NFTs seem to have the potential of providing a workaround for artists in this respect. ‘NFT platforms do offer artists the possibility to claim resale royalties on subsequent sales of the artists’ work not otherwise traditionally offered in certain countries.’<sup>2</sup>

However, as the topic of NFTs has gained the attention of the public rapidly together with the fact that the regulation process in this area is slower than the rising trend, gray areas have formed, offering the opportunity for fraudulent actions, placing a risk against the creators of NFTs and not only and thus opening ways for litigation, in the area of copyright and not only.

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<sup>1</sup> P Vallabhaneni, ‘The Rise of NFTs- Opportunities and Legal Issues’ (*White&Case*, 20 April 2021) <<https://www.whitecase.com/publications/alert/rise-nfts-opportunities-and-legal-issues>> accessed September 2022.

<sup>2</sup> G J Chinlund, K S Gordon, ‘What are the copyright implications of NFTs?’ (*Reuters*, 29 October 2021) <<https://www.reuters.com/legal/transactional/what-are-copyright-implications-nfts-2021-10-29/>> accessed September 2022.

‘Legal disputes with NFTs are currently only taking place in specialist circles. Nevertheless, there are numerous legal questions, e.g. regarding financial law obligations, copyright law classification as well as challenges posed by civil, criminal and data protection law.’<sup>3</sup>

## CHAPTER 2. SCOPE

### 2.1 Context of development

The precursor of the NFTs is widely considered to be Colored Coins which, however did not have the characteristics that the Non-Fungible Tokens possess nowadays, such as being a ‘token with a complex infrastructure that can support metaversal objects, art, music, and more’,<sup>4</sup> but being rather small denominations of the crypto-currency Bitcoin. A token in ‘itself is a cryptographically encrypted form of [a tangible] asset or right.’<sup>5</sup> The unicity of the Bitcoins and implicitly of the Colored Coins consists of ‘the fact that every extant Bitcoin can be identified and have its history tracked based on ID information built into

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<sup>3</sup> CMS Law-Now, ‘Legal challenges of ‘non-fungible tokens’(NFTs)’(CMS Law-Now, 22 April 2021 <[https://www.cms-lawnow.com/ealerts/2021/04/legal-challenges-of-non-fungible-tokensnfts?cc\\_lang=en](https://www.cms-lawnow.com/ealerts/2021/04/legal-challenges-of-non-fungible-tokensnfts?cc_lang=en)> accessed September 2022.

<sup>4</sup> N Kostopoulos and others, ‘Demistifying Non-Fungible Tokens(NFTs), (*EU Blockchain Observatory&Forum*,)<[https://www.eublockchainforum.eu/sites/default/files/reports/DemystifyingNFTs\\_November%202021\\_2.pdf](https://www.eublockchainforum.eu/sites/default/files/reports/DemystifyingNFTs_November%202021_2.pdf)> accessed October 2022.

<sup>5</sup> R Vrolijk, M Bednarski, ‘NFTs: new legal challenges on the horizon’, (*Stibbe*, 10 October 2021) <<https://www.stibbe.com/en/news/2021/october/nfts-new-legal-challenges-on-the-horizon>> accessed January 2022

the operation of the protocol [this information being used thus]to determine their purpose, for example, to represent real-world assets on the blockchain'.<sup>6</sup>

The President of the Israeli Bitcoin Association, Mr. Reni Rosenfeld, a cryptographer himself, published in 2012 a paper titled 'Overview of Colored Coins' in which he explained a mechanism which would help forming niche applications within the Bitcoin blockchain through a system of segregation of coins from the rest, for special purposes. Thus, within so-called permissioned environments- closed circles, users were able to add additional data to transactions, such as messages or custom information, the end-result being that the coins customized through 'the addition of metadata could be used to represent real-world assets'<sup>7</sup>. The eventual purpose of the Colored Coins would have been the replacement of time-consuming and expensive financial transactions. However, one of the main impediments for the further development of this concept was that, on one hand, it was required a unanimous consensus of the attributed value of the coin and on the other hand, 'needed the issuer to indiscriminately redeem them for the real-world asset. If a participant decided not to accept a coin in exchange for the physical asset there is no room for recourse'.<sup>8</sup>

Nevertheless, it is undeniable the contribution of Colored coins for displaying the potential of non-fungible assets; as the public interest was shifting rapidly towards these networks, the way was opened for a more elaborate implementation of non-fungibility through more expressive protocols. In the following two years the Counterparty platform was formed on top of the Bitcoin blockchain; Counterparty can be characterized as both a decentralized, open-source Internet protocol as well as a financial and economic platform which, in addition to having a significant variety 'of tools including wallets, an escrow agent functionality and a clearing house, it [also]

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<sup>6</sup>N Kostopoulos and others, 'Demistifying Non-Fungible Tokens(NFTs), (*EU Blockchain Observatory&Forum*,)<[https://www.eublockchainforum.eu/sites/default/files/reports/DemystifyingNFTs\\_November%202021\\_2.pdf](https://www.eublockchainforum.eu/sites/default/files/reports/DemystifyingNFTs_November%202021_2.pdf) > accessed October 2022.

<sup>7</sup>N Kostopoulos and others, 'Demistifying Non-Fungible Tokens(NFTs), (*EU Blockchain Observatory&Forum*,)<[https://www.eublockchainforum.eu/sites/default/files/reports/DemystifyingNFTs\\_November%202021\\_2.pdf](https://www.eublockchainforum.eu/sites/default/files/reports/DemystifyingNFTs_November%202021_2.pdf) > accessed October 2022.

<sup>8</sup>N Kostopoulos and others, 'Demistifying Non-Fungible Tokens(NFTs), (*EU Blockchain Observatory&Forum*,)<[https://www.eublockchainforum.eu/sites/default/files/reports/DemystifyingNFTs\\_November%202021\\_2.pdf](https://www.eublockchainforum.eu/sites/default/files/reports/DemystifyingNFTs_November%202021_2.pdf) > accessed October 2022.

allowed for asset creation and had a decentralized exchange, as well as a native currency known as XCP.’<sup>9</sup> These characteristics of the platform allowed, through a collaboration with gaming companies, for the non-fungible tokens to enter the entertainment industry. As the first use of the NFTs was done ‘by the gaming industry for game creators to issue virtual assets’<sup>10</sup>.

‘At the same time, development had also begun on the then dormant Ethereum ecosystem. Just three months after the launch of Ethereum’s mainnet the Etheria project presented users with a virtual open world composed of hexagonal tiles that can each be bought, sold and “built upon”, as NFT’<sup>11</sup>

Both Ethereum and Counterparty contributed setting a path of development of the NFTs past their origins.

In 2017 the NFT project launched by John Watkinson and Matt Hall was a milestone in the development of the tokens. The two ‘creative technologists’ have made a set of 10 000 unique characters native to the Ethereum blockchain, each having different attributes, with every attribute in itself having its own level of scarcity, a combination of attributes defining eventually the overall rarity of the character. The project, while being a major economic experiment to begin with, has set the foundation of the non-fungible tokens with the meaning attributed to them nowadays.

While a multitude of projects followed the initial success, it wasn’t until the ERC721, a token standard dedicated to the NFT, was introduced in the Ethereum blockchain. Following ‘the introduction of the ERC-721 standard’, the first project called Cryptokitties was created. The project in itself was a blockchain-based game which proved to be of significance for three main reasons: ‘First, they were one of the

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<sup>9</sup>N Kostopoulos and others, ‘Demystifying Non-Fungible Tokens(NFTs), (*EU Blockchain Observatory&Forum*,)<[https://www.eublockchainforum.eu/sites/default/files/reports/DemystifyingNFTs\\_November%202021\\_2.pdf](https://www.eublockchainforum.eu/sites/default/files/reports/DemystifyingNFTs_November%202021_2.pdf)> accessed October 2022.

<sup>10</sup> B Hwang, ‘The developing legal landscape of NFTs’ (*Lexology*, 2 November 2021) <<https://www.lexology.com/library/detail.aspx?g=47d2d377-6233-41ba-b2fe-23814cd3a456>> accessed October 2022.

<sup>11</sup>N Kostopoulos and others, ‘Demystifying Non-Fungible Tokens(NFTs), (*EU Blockchain Observatory&Forum*,)<[https://www.eublockchainforum.eu/sites/default/files/reports/DemystifyingNFTs\\_November%202021\\_2.pdf](https://www.eublockchainforum.eu/sites/default/files/reports/DemystifyingNFTs_November%202021_2.pdf)> accessed October 2022.

first projects to highlight gaming as a tangible use case for blockchain(...) Secondly, they underlined the significance of more flexible and expressive protocols, such as Ethereum, Finally, Cryptokitties also highlighted the limitations of blockchain and popularized the notion of the blockchain trilemma.’<sup>12</sup>

In order to have a comprehensive understanding of a system, all the interconnected elements should be defined. Thus, as the blockchain technology is the base for both fungible and non-fungible tokens, it seems natural that a description of the system is in order. For an easier understanding, a blockchain can be viewed ‘as a continuously expanding list of data records in which each new data record (block) is linked to the respective preceding block by mathematical-cryptographic functions’.<sup>13</sup>

The linking of data blocks renders the previous blocks immutable, i.e. tamper-proof. Unlike traditional data hosting, the blockchain is not stored ‘in the cloud’ or in a central data center, but is rather decentralized on distributed computers (nodes). Furthermore, ‘the stability of the blockchain and the addition of new blocks are ensured by what are referred to as "miners" who provide computing power and are remunerated with "coins", i.e. digital money in the currency unit of the respective blockchain’.<sup>14</sup> Contrary to the tendential belief, this system was in existence under a different name- distributed ledger technology- since the analogue era.

Non-Fungible Tokens – in short, NFTs – have started their development approximatively a decade ago. One of the main characteristics of these

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<sup>12</sup>N Kostopoulos and others, ‘Demistifying Non-Fungible Tokens(NFTs), (*EU Blockchain Observatory&Forum*,)<[https://www.eublockchainforum.eu/sites/default/files/reports/DemystifyingNFTs\\_November%202021\\_2.pdf](https://www.eublockchainforum.eu/sites/default/files/reports/DemystifyingNFTs_November%202021_2.pdf) > accessed October 2022.

<sup>13</sup> CMS Law-Now, ‘Legal challenges of ‘non-fungible tokens’(NFTs)’(CMS Law-Now, 22 April 2021 <[https://www.cms-lawnow.com/ealerts/2021/04/legal-challenges-of-non-fungible-tokensnfts?cc\\_lang=en](https://www.cms-lawnow.com/ealerts/2021/04/legal-challenges-of-non-fungible-tokensnfts?cc_lang=en) > accessed September 2022.

<sup>14</sup> CMS Law-Now, ‘Legal challenges of ‘non-fungible tokens’(NFTs)’(CMS Law-Now, 22 April 2021 <[https://www.cms-lawnow.com/ealerts/2021/04/legal-challenges-of-non-fungible-tokensnfts?cc\\_lang=en](https://www.cms-lawnow.com/ealerts/2021/04/legal-challenges-of-non-fungible-tokensnfts?cc_lang=en) > accessed September 2022.



cryptographic tools is indicated by the term 'non-fungible', which shows their uniqueness, in other words the inability to be substituted and by its authenticity, foiling the counterfeit market. One could infer that, by their name, the NFTs are the opposite of Fungible tokens, but for the public that is not knowledgeable regarding non-traditional asset categories or digital and technological terminology, first should be cleared the meaning of a Fungible Token.

Fungible tokens, or cryptocurrencies, similarly to the traditional currencies, 'have equivalent fractional values to one another,(...) therefore making them 'fungible' or interchangeable'<sup>15</sup>. Opposite to fungible tokens, NFTs do not have an equivalent fractional value, by this representing individual and unique values. The unicity and thus, the scarcity of these items represents one of the reasons for their increasing popularity.

As one of the initial creators of NFTs stated, there is a disadvantage to the fact that the tokens, 'both fungible and non-fungible, are built [upon and rely on the blockchain] technology'<sup>16</sup>, that being the incapacity of the blockchain to store the underlying digital asset, particularly in regards to larger files, such as artworks, with the end result being that, when purchasing an NFT, one does not buy in fact the digital work but merely a link to it. 'Thus, the "Token" portion to an NFT is truly a digital item designed to track the asset by its "TokenID" and attribute ownership to the current owner, as the transaction histories dating from the "minting" (i.e., initial creation and recordation on blockchain) of the NFT to current ownership are technically public.'<sup>17</sup>

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<sup>15</sup> G J Chinlund, K S Gordon, 'What are the copyright implications of NFTs?' ( *Reuters*, 29 October 2021) <<https://www.reuters.com/legal/transactional/what-are-copyright-implications-nfts-2021-10-29/>> accessed September 2022.

<sup>16</sup> Expert Market, 'NFTs and Intellectual Property Protection', ( *Expert Market*, 4 January2022) <<https://www.expert-market.com/nfts-and-intellectual-property-protection/>> accessed March 2023

<sup>17</sup> G J Chinlund, K S Gordon, 'What are the copyright implications of NFTs?' ( *Reuters*, 29 October 2021) <<https://www.reuters.com/legal/transactional/what-are-copyright-implications-nfts-2021-10-29/>> accessed September 2022.

## 2.2 Definition

NFTs provide proof ‘of ownership [and] other rights to a reference object. [As] digital goods, can [by their nature] be copied virtually free of charge’<sup>18</sup>, through the creation of NFTs they are artificially rendered scarce. NFTs and asset tokenization offer a multitude of commercial applications, not only in the digital sphere, but also including the tangible goods which can be referenced using NFTs.

In order to better understand these items, one should clarify what can constitute an NFT and also which are its main characteristics. Any piece of art including videos, tracks, photographs, games, apps can become a Non- Fungible Token.

The main characteristics of these tokens are:

- **Indivisibility**, in the sense that none of the tokens can be divided into smaller denominations
- **Authenticity**, ownership being easily proved and verified
- **Non-Interoperability**, as the NFTs do not have the same value, they are not inherently interchangeable, unlike fungible tokens-cryptocurrencies
- **Tradability**, NFTs can be traded on various cryptocurrencies exchanges; owners often enjoy additional advantages of the trading systems
- **Interaction with multiple ecosystems**, meaning that through the token standards ERC 721 and 1155 one has the possibility of creating non-fungible tokens for digital collectibles
- **Liquidity**, by being able to trade the NFTs on a continuous regime, their level of liquidity being thus high, the tokens are open to a great range of customers which might have the interest in buying/selling them
- **Programmability**, creating a niche with high creativity possibilities

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<sup>18</sup> T Kraul and others, ‘Non-Fungible tokens (NFTs) and copyright law (Noerr, 15 October 2021) <<https://www.noerr.com/en/newsroom/news/non-fungible-tokens-nfts-and-copyright-law> > accessed September 2022.

- **Scarcity**, in the sense that programmers have the ability to, once setting particular characteristics to an item, render them impossible to alter after launching

Furthermore, as the NFTs are a completely original digital asset by its unique set of metadata, this has opened the way towards the e-commerce field for many artists and collectors, by tokenizing their goods and eventually launching them on sales or auction platforms.

‘(NFTs) — i.e., certificates of ownership stored on a blockchain that are typically associated with a digital asset, such as visual art, videos, music or collectibles’.<sup>19</sup>

‘An NFT is a digital asset whose uniqueness and ownership can be demonstrated and verified using distributed ledger technology (DLT)’.<sup>20</sup>

As is suggested by its title, a Non-Fungible Token differs from the rest through its uniqueness - its non-fungibility. A token, by being fungible, can be replaced by another, as there is no difference in value and/or attributes. On the other hand, as mentioned above, this would not be the case with NFTs due to the specific value and attributes that each of the NFTs possesses, having the ability to be owned by only one person or entity at the same time. The unicity of the NFTs is ensured through the use of a software recorded on the blockchain- a smart contract- by rendering the NFTs indivisible and unduplicable. ‘An NFT creates scarcity by generating a digitally unique record authenticating ownership of a particular version of a digital work (usually one the creator themselves holds out as being the true version). Therefore, they represent

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<sup>19</sup>P Bine and others, ‘Regulatory approaches to Nonfungible Tokens in the EU and UK’ (*skadden*, 15 June 2021 < <https://www.skadden.com/insights/publications/2021/06/regulatory-approaches-to-nonfungibletokens> > accessed October 2022.

<sup>20</sup>Clifford Chance, ‘Non-Fungible tokens:the global legal impact ‘ (*Clifford Chance June 2021*) <<https://www.cliffordchance.com/content/dam/cliffordchance/briefings/2021/06/non-fungibletokens-the-global-legal-impact.pdf> > accessed May 2022.

the ultimate example of an artwork deriving value from its provenance rather than the quality of the work itself.’<sup>21</sup>

The use of the NFTs is that of creating ‘a tokenised proof of title ‘to a unique digital version of an underlying digital asset (such as images, videos or other digital content) or physical asset (such as paintings, sculptures or other tangible assets)’.<sup>22</sup> By minting an NFT one is creating a unique digital version of an artwork which cannot be altered or removed, and is available for free viewing and trading in a secure and transparent manner with regards to ownership and transaction traceability. The issuance of a Non-Fungible Token can consist of a singular token or a multitude of tokens. There is the option of incorporating a so-called smart contract which specifies ‘certain rights and obligations of the buyer and seller’. Non-Fungible Tokens have, in theory, the potential to render the trade of physical assets more efficient, by digitizing them, as for example many businesses are already doing, with various items, from iconic images, event tickets or music albums to gaming and e-sports content or unique sportswear. The NFTs are generating revenue by enabling either the creation of new digital products or an efficient commercialization of unique assets which otherwise would be difficult to sell or prove ownership of. While the NFTs are characterized as being primarily indivisible, through their constant developments a derogation from the main rule has occurred- that of the ability of some NFTs to have a ‘fractionalized’ ‘ownership of the underlying asset i.e. to split ownership so that each purchaser of an NFT benefits from the underlying asset in proportion to the fraction they own, which can enable new ownership structures’.<sup>23</sup>

Due to their nonfungibility, NFTs are also considered to be ‘one of the generators of digital technical scarcity. [As stated above, the] NFTs are digital

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<sup>21</sup> Art Law&More, ‘What are the legal issues concerning Non-Fungible Tokens (NFTs)?’, (*Art Law&More*, 8 July 2021) < <https://artlawandmore.com/2021/07/08/what-are-the-legal-issues-concerning-non-fungibletokens-nfts/> > accessed May 2022.

<sup>22</sup> Clifford Chance, ‘Non-Fungible tokens:the global legal impact ‘ (*Clifford Chance June 2021*) < <https://www.cliffordchance.com/content/dam/cliffordchance/briefings/2021/06/non-fungibletokens-the-global-legal-impact.pdf> > accessed May 2022.

<sup>23</sup> Clifford Chance, ‘Non-Fungible tokens:the global legal impact ‘ (*Clifford Chance, June 2021*) < <https://www.cliffordchance.com/content/dam/cliffordchance/briefings/2021/06/non-fungibletokens-the-global-legal-impact.pdf> > accessed May 2022.

certificates or digital authenticity seals that grant ownership of an asset represented as an NFT'.<sup>24</sup> Thus, as NFTs are representations of assets- material or immaterial- despite the item which is associated with an NFT being available for anyone, what would be owned in fact is a certifiable, digitally authenticated copy of the item, and not the original version of it.

## 2.3 Scope

'Non-Fungible Tokens, widely known as NFTs, have recently gained much attention due to their role in the transfer of digital artworks'.<sup>25</sup>

There is a seemingly wide range of complexity of legal challenges that can be reached in this field, due to both the novelty of the subject and the multitude of the variations that the process of creating-minting-selling the tokens can contain.

An essential first point that should be paid attention to is the clarity with regards to the rights that are being passed over with the sale of a NFT. The range of transmitted rights is broad, thus, can include from certification of ownership of an asset, license of use of intellectual property rights- to contractual rights, such as a right to receive or use a particular asset or to have access to certain benefits. Through a clear definition of the scope of the NFT and the rights attached to it little space is left for either potential claims of misrepresentation of rights on offer from purchasers, or on the part of the issuer, for giving up unintended rights.

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<sup>24</sup>J A Coutinho, 'The interrelation between NFTs and copyright,' (*Inventa*, 8 July 2021) <<https://www.mondaq.com/copyright/1089148/the-interrelation-between-nfts-and-copyright> > accessed October 2022.

<sup>25</sup>R Vrolijk, M Bednarski, 'NFTs: new legal challenges on the horizon', (*Stibbe*, 10 October 2021) <<https://www.stibbe.com/en/news/2021/october/nfts-new-legal-challenges-on-the-horizon> > accessed September 2022.

## • Intellectual property issues

Following the rule of copyright- that unless explicitly stipulated, selling a copy of any creative work does not include the transfer of the copyright- ‘the sale of the NFT does not necessarily transfer the underlying copyright in the work which exists "off-chain" to the purchaser’.<sup>26</sup>

As not everyone who participates in the NFT market is familiar with the restrictions in regard to copyrighted works, an infringement liability is very probable to occur. Situations might occur where the purchaser of an NFT might be under the belief that through the purchase also the underlying art associated with the NFT was acquired. While under copyright law, the owner of the copyright is the creator of the original work, ‘who retains the exclusive right to copy, distribute, modify, publicly perform, and publicly display the art (unless specifically granted to someone else).’<sup>27</sup>

As typically, the purchaser receives only the right for personal use of the copyrighted work, by being unaware of the legal regulations in the matter and therefore under the belief that the rights associated with the underlying art were misrepresented, this might lead to litigation liability for the NFT seller.

As previously emphasized, the purchase of an NFT does not automatically include the transfer of ownership of the copyright over the creation. In other words, similarly with the physical artworks, the purchaser, if not differently stipulated, does not have the right to make and sell copies of the purchased artwork. (--give article in law) . As a general rule, the rights of the NFTs owners are limited to the ownership, further selling or lending of the NFT itself. However, in the circumstance in which an

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<sup>26</sup> G J Chinlund, K S Gordon, ‘What are the copyright implications of NFTs?’ ( *Reuters*, 29 October 2021) <<https://www.reuters.com/legal/transactional/what-are-copyright-implications-nfts-2021-10-29/>> accessed September 2022.

<sup>27</sup> P Vallabhaneni, ‘The Rise of NFTs- Opportunities and Legal Issues’ ( *White&Case*, 20 April 2021) <<https://www.whitecase.com/publications/alert/rise-nfts-opportunities-and-legal-issues>> accessed September 2022.

NFT created based on an already existing artwork is being sold, more complex issues can arise.

Under the German ‘Civil Law, [while] NFTs could(...) enjoy protection in torts as ‘other rights’(section 823 para.1 of the German Civil Code), (...) [ they are considered not to constitute absolute rights, as] they are not tangible items within the meaning of sections 90 and 903 of the German Civil Code’.<sup>28</sup> Thus, the significance of each NFT is to be attributed individually, through contractual clauses.

‘The legal relationships between the buyer and seller of an NFT, as well as the rights associated to the NFT and related to the reference object, therefore depend primarily on (i) what absolute rights exist in the reference object under the respective legal jurisdiction and (ii) what the parties agree regarding the transfer of rights. In the context of the currently particularly active (digital) art market, the absolute rights are primarily copyrights and the transferred rights are rights of use under copyright law (licenses). However, this requires further clarification on a case-by-case basis’.<sup>29</sup>

‘Ownership of a copyright provides exclusive rights to the owner under 17 USC § 106 — the right to reproduce the work, prepare derivative works, distribute copies, to display the work publicly, and to perform the work publicly’.<sup>30</sup>

As the creation of a NFT can be considered a copy or even a derivative of the original work, under the US Copyright law ‘(17 USC § 101: "a work based upon one or more preexisting works" such as an "art reproduction (...) or any other form in which a work may be recast, transformed, or adapted."), the copyright holder (absent a license)

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<sup>28</sup> <https://www.german-probate-lawyer.com/en/glossary/def/ownership-eigentum.html>

<sup>29</sup> T Kraul and others, ‘Non-Fungible tokens (NFTs) and copyright law (Noerr, 15 October 2021) <<https://www.noerr.com/en/newsroom/news/non-fungible-tokens-nfts-and-copyright-law> > accessed September 2022.

<sup>30</sup> G J Chinlund, K S Gordon, ‘What are the copyright implications of NFTs?’ ( *Reuters*, 29 October 2021) <<https://www.reuters.com/legal/transactional/what-are-copyright-implications-nfts-2021-10-29/> > accessed September 2022.

is and should be the only one with the authority to transform the original work into an NFT'.<sup>31</sup>

While according to copyright law, a work can be copied once the copyright connected to it has expired, hence the practice which is common for museums- that of digitalizing and subsequent licensing of the artworks. However, it most definitely contributes to the controversy the fact that an unconnected third party would have the option to monetize copies of artworks fallen into the public domain; moreover, such an attempt might constitute an infringement of certain contractual clauses imposed by museums and galleries.

The minting of an NFT which targets a contemporary digital work, this work, thus still being copyright protected. It could be considered a clear case of infringement of copyright- 'if the process of minting and selling involves making a copy of the underlying digital work'.<sup>32</sup> However, if the said process does not involve the making of a copy, it could be argued that there is no infringement, NFT being only a cryptographic token linked to a digital asset. It is not to be excluded however that such practice is free of any legal claims (based on fraud, for example), but rather is to be noted that the claim of the creator of the NFT with regards to the underlying work has a significant weight in assessing the legality of the matter.

On the other hand, as selling a claim to a unique piece of content might seem in first instance as equivalent to renouncing the copyright, from the creators' perspective, a comprehensive method of control over the use of IPR associated with an NFT plays an important role. Attention should be paid to licensing an IPR through the transfer of the NFT,

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<sup>31</sup> G J Chinlund, K S Gordon, 'What are the copyright implications of NFTs?' ( *Reuters*, 29 October 2022) <<https://www.reuters.com/legal/transactional/what-are-copyright-implications-nfts-2021-10-29/>> accessed September 2022.

<sup>32</sup> Art Law & More, 'What are the legal issues concerning Non-Fungible Tokens (NFTs)?', (*Art Law & More*, 8 July 2021) <<https://artlawandmore.com/2021/07/08/what-are-the-legal-issues-concerning-non-fungibletokens-nfts/>> accessed May 2021



to ensure that, in case of existence of a trademark, trademark protection will not be omitted, together with effective remedies, in case of misuse of IPR.

Further questions can arise with regards to the moral rights of the artist, 'both the right to have his work attributed to him and to object to its derogatory treatment.'<sup>33</sup>This matter is seldomly touched also in the material world, so one could only speculate on the development of such an issue in the digital world .

Furthermore, as issuers of NFTs would be likely to involve a third-party technology provider in order to 'mint' the tokens, this agreement should clearly identify the scope of the provider's responsibilities and should offer clear IPR and confidential information protection assurances.

Data protection laws give individuals the right to erase or rectify inaccuracies in their personal data, while the immutable nature of the blockchain makes it impossible for these rights to be exercised. This, might thus render the NFTs that contain personal information in violation of the data protection laws.

Similarly, as mentioned above, in order to avoid misinterpretation of what is to be received through the NFT, the purchaser's due diligence is important, especially if the rights and obligations would have an impact on the current or future value of the NFT and the underlying asset.

'The scope of NFTs is not limited to virtual worlds either, however. In principle, all assets in the real world can be "tokenized", either as fungible tokens (where one asset is divided into several tokens of the same kind) or as non-fungible tokens (either where there is only precisely one token for a certain asset or where an asset is parceled into several different tokens)'.<sup>34</sup>

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<sup>33</sup> Art Law & More, 'What are the legal issues concerning Non-Fungible Tokens (NFTs)?', (*Art Law & More*, 8 July 2021) <<https://artlawandmore.com/2021/07/08/what-are-the-legal-issues-concerning-non-fungibletokens-nfts/>> accessed May 2021

<sup>34</sup> CMS Law-Now, 'Legal challenges of 'non-fungible tokens'(NFTs)' (CMS Law-Now, 22 April 2021 <[https://www.cms-lawnow.com/ealerts/2021/04/legal-challenges-of-non-fungible-tokensnfts?cc\\_lang=en](https://www.cms-lawnow.com/ealerts/2021/04/legal-challenges-of-non-fungible-tokensnfts?cc_lang=en)> accessed September 2022.

## • Contractual matters

As to the value of the NFT- the value that is expected to be generated from the sale, or even whether its ownership can be fractioned- this ‘will largely be driven by the commercial rationale for issuing the NFT. For example, if the value lies in the scarcity of an NFT or the underlying asset, an issuer may want to restrict fractionalization (and must ensure it can enforce those restrictions), and purchasers may seek assurances in that respect. However, if the NFT or the underlying asset is high-value, fractionalization of the NFT (without dividing the underlying asset) may open up investment opportunities for those otherwise unable to afford it. Those factors will also determine (for example) the content of any conditions of sale or smart contract and the applicable regulatory framework’.<sup>35</sup>

‘While NFTs exist to authenticate provenance and title, and although they benefit from the blockchain technology, which creates clear, timestamped audit trails of ownership, the risk of fraud persists, particularly in light of the anonymity of blockchain’.<sup>36</sup>

As said above, due to its novelty and lack of clear regulation, this is an attractive field for fraud, moreover, by the considerable sums that are involved in the transactions with NFTs together with the fact that often the participants to the trade (the buyer and the seller) often remain anonymous, money laundering can occur.

Being valid for any agreement, not only in the technological field, the terms of the transaction must be clearly set. The terms of the agreement would likely be following the structure of ‘traditional’ legal terms, to which a smart contract might be added, in order to automate certain aspects. The agreement should be in compliance with the consumer protection regulation in force in the country where the sale is being closed, which would give purchasers enforcement rights. Nevertheless, besides a well-

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<sup>35</sup> Osborne Clarke, ‘What are the legal issues around NFTs?’ (Osborne Clarke, 12 October 2021) <<https://www.osborneclarke.com/insights/what-are-legal-issues-around-nfts> > accessed October 2022.

<sup>36</sup> D Jewell, k Roe, ‘Non-fungible tokens: What are the legal risks?’ (DLA Piper, 17 October 2021) <<https://www.dlapiper.com/en/us/insights/publications/2021/09/non-fungible-tokens-what-are-the-legal-risks/> > accessed October 2022.

drafted agreement, the issuers ought to prove awareness and consideration in regards to infringements which might occur in any other jurisdiction and how potential disputes might thus be resolved.

As valid for any sales contract, it is paramount that the purchaser of an NFT proves consideration in regards to the governing terms of the agreement, which includes both the rights and obligations which are acquired and the ones that are not being passed over through the sale. The general rule which is crucial to be understood by NFT investors, is that, the ownership of an NFT is not equivalent to the ownership of the underlying asset, thus, the rights which are directly associated with the underlying asset- such as the copyright- will remain in the possession of the creator of the NFT, if not otherwise expressly stipulated.

While it is advised and expected for investors to educate themselves regarding the mechanisms of the NFTs, equally, sellers should be aware of the risks of being held liable of misrepresentation. Therefore, it is an obligation of the seller to clearly present the terms of sale, in particular in regards with the history of ownership or storage of the physical asset.

As already mentioned, there is a distinction to be made between the NFT and the underlying asset that is being represented. The value of the NFT is directly connected to the existence of the asset that it represents, in the sense that, by principle a NFT would be rendered worthless in case of disappearance of the underlying asset. However, exceptions to this rule have occurred, where the value of the NFT has increased after the disappearance of the physical asset- as it was the case with the NFT representing a deliberately destroyed artwork of the English artist Banksy.

‘It is nevertheless important to ensure (in some cases) that there is some guarantee as to the safety of the underlying physical asset and allocation of risk in the contractual documentation before purchasing an NFT’.<sup>37</sup>

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<sup>37</sup> D Jewell, k Roe, ‘Non-fungible tokens: What are the legal risks?’ (*DLA Piper*, 17 October 2021) <<https://www.dlapiper.com/en/us/insights/publications/2021/09/non-fungible-tokens-what-are-the-legal-risks/>> accessed October 2022.

An NFT, as previously mentioned, contains information regarding the asset that it represents; concerning digital assets, the NFT indicates also the location of the asset, being connected to it through a link. Typically, the NFT and the digital asset are stored in different places, which might pose problems in the circumstance of the deletion of the digital asset or failure of the hosting server on which the asset is stored, in the sense that, if the link between the NFT and the digital asset would be broken, this would render the NFT worthless as it cannot be backed up. Due to its unicity and thus inability of being replaced, this would leave the purchaser of the NFT without recourse, which could result in regulatory record keeping violations, loss of data and business interruptions.

#### **• Financial matters**

The range of financial obligations under which the NFT might become liable spans from anti-money laundering regulations, to more onerous obligations where investment laws such as securities regimes would become triggered. It will be applicable the law within the jurisdiction in which the sale ( of the NFT or of the related services) has been made. However, a multi-jurisdictional analysis would be often required, as the inherent nature of the NFTs is a global one.

Given the element of globality, the participants to such trading should act with awareness towards the legal and regulatory framework of the different jurisdictions under which such a trade might be bound. However, as already mentioned, the by being a new asset class, the regulatory framework in this field is still under development, which leaves place at time being for both fraudulent actions and errors made by lack of familiarity with the topic. Nevertheless, there can be identified certain directions that the regulations might follow, such as is the case with UK, for example, where, based on a guidance published by the UK FCA in 2019, it can be considered likely that the majority of the NFTs would be seen as ‘unregulated tokens’, as the don’t meet neither of the definitions of security tokens nor electronic money, while other NFTs could be considered regulated financial instruments.

‘The EU’s Fifth Anti-Money Laundering Directive (5AMLD), which came into effect in the UK on 10 January 2020, subjects all “Art Market Participants” (i.e. anyone who acts in the sale or purchase of works of art in excess of €10,000) to a plethora of new duties. Most notable among these is the requirement to carry out Client Due Diligence (CDD) to verify a purchaser’s identity and their source of funds in advance of any transaction’.<sup>38</sup>

‘Now that NFTs are undoubtedly part of the mainstream art market and the legitimacy of the art-form is becoming more widely accepted, it seems only a matter of time until these digital artworks are brought within the scope of the anti-money laundering regulations. . This would significantly change the nature of NFT transactions and probably the market as a whole’.<sup>39</sup>

- **Taxation**

Yet another field that proves the global scarcity of legislative guidance of NFTs is the taxation field. As it was not mainly included in texts that deal with crypto-assets investors find it difficult to determine the position of the NFT from the prism of taxation.

- **Property law**

Generally, the property law which governs an asset is determined by the location of the asset itself. While it is of great importance to identify the governing system over one’s ability to sell or secure an NFT, further questions are bound to arise from the fact that an NFT represents rather a unique copy of an asset and not the underlying asset itself.

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<sup>38</sup> P M Mishra, ‘Legal issues concerning the Non-Fungible Tokens (NFTs)?’, (*mid-day*, 24 September 2021) < <https://www.mid-day.com/lifestyle/infotainment/article/legal-issues-concerning-non-fungible-tokens-nfts-23193731> > accessed November 2022.

<sup>39</sup> Art Law& More, ‘What are the legal issues concerning Non-Fungible Tokens (NFTs)?’, (*Art Law& More*, 8 July 2021)< <https://artlawandmore.com/2021/07/08/what-are-the-legal-issues-concerning-non-fungibletokens-nfts/> > accessed May 2022

## CHAPTER 3. INTELLECTUAL PROPERTY

### CONSIDERATIONS

In Europe, as well as in the United States, the regulation of non-fungible tokens is still under development, thus, to this point, there is no uniform regulatory framework. However, there is a certain level of guidance, as the NFTs would still be subject to existing laws and regulations, such as consumer protection laws, anti-money laundering laws and data protection laws. It is also important to mention that, due to the lack of uniformity, NFTs may be treated differently depending on the jurisdiction, as each state may have their own specific laws and regulations.

Therefore, the following analysis is to be made from the prism of the above mentioned, and with consideration to the recent developments towards the uniformization of the legal framework in the area of non-fungible tokens.

### **3.1 Copyright**

#### **The EU perspective**

While the general framework of IP protection is similar across EU countries, the specific laws and regulations might still vary. Following, is a comparison of IP regulations with regards to NFTs:

- France: the French Intellectual Property Code provides for copyright protection of original works of art, including NFTs. The code also includes moral rights for creators, such as the right to be identified as the author of the work
- Germany: German copyright law also provides for protection of original artworks, including NFTs. Copyright holders have the exclusive right to reproduce and distribute the work

- Switzerland: Swiss copyright law provides for the protection of original works of art, including NFTs. The law also includes moral rights for creators, such as the right to be identified as the author of the work
- Netherlands: the Dutch copyright law provides for protection of original works of art, including NFTs. Copyright holders have the right to reproduce and distribute the work

At the European level, even though there is a scarcity within the regulatory framework with regards to NFTs, recently a study was published, commissioned by the European Parliament's Policy Department for Citizen's rights and Constitutional affairs, with the aim of providing an overview over Intellectual Property Rights and Distributed Ledger technology, focusing on IP issues relating to non-Fungible tokens and tokenized physical art works.

### 1. Scope of copyright related issues further discussed

Aside from the 'traditional' copyright matters, such as protection of generative works, unauthorized use of contents or questions of moral rights due to lack of attribution, in relation to the DTL(Distributed ledger technology) there are several copyright issues to be mentioned.

Specifically, the operations performed from the creation and publishing of the NFT are to be analyzed so as to determine their relevance from the perspective of copyright.

By doing so, is to be assessed whether the rightsholder, in the circumstance in which he did not give permission to a third party to mint or offer the NFT, could claim injunctive relief and/or damages.

As a matter of principle, unless the right has been previously granted to a third party, only the author has the right of minting the NFT which represents his work. The reasoning behind this principle is that an upload of an image (essential in offering an NFT on a marketplace) constitutes a 'reproduction' under Article 2 InfoSoc Directive.

Article 2 of the InfoSoc Directive states that:

‘Member States shall provide for the exclusive right to authorize or prohibit direct or indirect, temporary or permanent reproduction by any means and in any form, in whole or in part:

- a) for authors, of their works;
- b) for performers, of fixations of their performances;
- c) for phonogram producers, of their phonograms;
- d) for the producers of the first fixations of films, in respect of the original and copies of their films;
- e) for broadcasting organizations, of fixations of their broadcasts, whether those broadcasts are transmitted by wire or over the air, including by cable or satellite.’

Furthermore, also the steps preceding the minting of the NFT could fall under the meaning of Article 2 InfoSoc Directive.

Technically, the creation of an NFT is comprised of the following three steps:

- creation of a source
- creation of the metadata
- the minting of the token

After the completion of these steps- each of which having the potential to infringe the author’s rights under the InfoSoc Directive- the NFT can be offered for sale.

A further aspect to be considered, when assessing the copyright implications in the creation of a NFT, is the distinction between On-Chain and Off-Chain NFTs.

As the name describes, the content of an On-Chain NFT is being registered on the blockchain in its original form, as opposed to the Off-Chain NFT where the creative content is only referred to through a link (a more affordable option, and thus more commonly used).

## 2. Analysis of the steps of the creation of an NFT and their relevance from a copyright perspective



## 2.1 Creation of an Off-Chain NFT

### **a. Creation of a source**

Simply described, the creation of a source implies uploading a creative work- an asset- to an online (off-chain) database. The act of uploading the content in itself is perceived as an act of reproduction under Article 2 of the InfoSoc Directive. According to the said Article, the right of reproduction is exclusive to the author, unless otherwise stipulated, thus any unauthorized action of reproduction of a work- including the purpose of creating a NFT- is considered an infringement of that right.

Furthermore, according to Article 3 of the InfoSoc Directive, the first step of creating an NFT without the author's authorization would also infringe the author's right of communication to the public.

Article 3 InfoSoc states that:

'1. Member States shall provide authors with the exclusive right to authorize or prohibit any communication to the public of their works, by wire or wireless means, including the making available to the public of their works in such a way that members of the public may access them from a place and at a time individually chosen by them.

2. Member States shall provide for the exclusive right to authorize or prohibit the making available to the public, by wire or wireless means, in such a way that members of the public may access them from a place and at a time individually chosen by them:

- a) for performers, of fixations of their performances;
- b) for phonogram producers, of their phonograms;
- c) for the producers of the first fixations of films, of the original and copies of their films;
- d) for broadcasting organizations, of fixations of their broadcasts, whether these broadcasts are transmitted by wire or over the air, including by cable or satellite.

3. The rights referred to in paragraphs 1 and 2 shall not be exhausted by any act of communication to the public or making available to the public as set out in this Article'

Even though it is not defined in Article 3 the scope of ‘communication to the public’, from the concept in itself, two attributes can be identified : there exists an act of ‘communication’ and this act of communication is made towards a ‘public’.

In the Land Nordrhein-Westfalen and Dirck Renckhoff Case, the CJEU has defined the concept of ‘public’ as an ‘indeterminate number of potential recipients’ which implies ‘a fairly large number of persons’.

With regard to the ‘communication’ to the public, based on the GS Media case, the creation of a link would constitute communication to the public. However, even though an Off-Chain NFT is being uploaded to an online repository through an URL, the link in itself is firstly very long and not self-explanatory and secondly, the access to it is limited to the buyer of the NFT.

Thus, it can be said that that the uploading of a work would not infringe the author’s right of communication to the public, within the meaning of Article 3 InfoSoc directive.

## **b. Creation of the metadata**

As mentioned above, the upload to the blockchain can prove to be rather expensive given the size of the file to be uploaded. For this reason a more common practice is that of creating a link which stores information about the respective NFT, such as the name of the author and description of the asset and the source of the work (URL).

As the metadata is not easily accessible given the fact that it is written in code which requires intermediate steps in order to be read, the criteria for this process to be considered a ‘communication to the public’ are not met. By being uploaded to an online repository and by being presented in the form of an URL with the length of about 80 characters, further supports the fact that the metadata is not readily discoverable for the broad public.

In addition, according to Article 2 Info Soc Directive, the creation of metadata is not to be considered a reproduction of the work itself but only of the link to the respective work.

All of the above considered, it can be concluded that the step of creation of the metadata is not relevant from a copyright perspective.

### **c. The minting of the NFT**

The process of minting/ creating the NFT implies stamping ‘the metadata and the contract address onto the token with its unique token ID, which is then deployed onto the blockchain’.<sup>40</sup>

Deriving from the conclusion regarding the creation of the metadata- that of it not constituting a reproduction of the work itself, also the minting of an NFT is not to be considered a reproduction under Article 2 InfoSoc Directive.

With regards to the ‘communication to the public’, the act of deploying an NFT on the blockchain and not further publishing it on an NFT marketplace is not considered as being made accessible to the public, as the token is not available to a fairly large number of potential recipients. ‘If no further steps are taken, the token is not searchable through a search engine and therefore only a chosen amount of people with the knowledge of the tokenID and the contract address can find the work’.<sup>41</sup>

To conclude, out of the three steps that are to be completed for the minting of an NFT, only the first step- the creation of a source- is relevant from a copyright perspective.

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<sup>40</sup> K Grabers-von Boehm and others, ‘Intellectual Property Rights and Distributed Ledger Technology’, (*European Parliament*, October 2022)<  
[https://www.europarl.europa.eu/RegData/etudes/STUD/2022/737709/IPOL\\_STU\(2022\)737709\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2022/737709/IPOL_STU(2022)737709_EN.pdf) > accessed November 2022.

<sup>41</sup> K Grabers-von Boehm and others, ‘Intellectual Property Rights and Distributed Ledger Technology’, (*European Parliament*, October 2022)<  
[https://www.europarl.europa.eu/RegData/etudes/STUD/2022/737709/IPOL\\_STU\(2022\)737709\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2022/737709/IPOL_STU(2022)737709_EN.pdf) > accessed November 2022.

‘If the person minting the NFT is not the rightsholder of such source or has not been given a permission, the step of creating the source is very likely to lead to infringement. The consequence would be that the rightsholder could claim injunctive relief and, if necessary, damages’.<sup>42</sup>

## 2.2 Creation of an On-Chain NFT

The main aspects that differentiate an On-Chain NFT from an Off-Chain NFT are the location where the NFT is to be stored and the format of the file that represents the asset.

Unlike the Off-Chain NFT, the On-Chain Token is to be stored directly on the blockchain. However, despite the difference, the same rationale is applied in both On and Off -Chain Tokens, in the sense that the mere storage on a blockchain cannot be considered a communication to the public, for the reasons above mentioned.

On the other hand, considering the format of the file through which the asset is represented, by being a clear copy of the original work, it can only be considered a reproduction under Article 2 Info Soc Directive, thus making the consent of the author necessary for the minting of the Token.

In conclusion, with regards to both methods of creating a Token, the consent of the author of the work is generally required. Thus, while the minting of the NFT could be found as not to be an infringement under Article 3 InfoSoc Directive, it would- in a majority of cases- fall under the stipulations of Article 2 InfoSoc Directive regarding the reproduction of a creative work.

## 3. Copyright relevant questions in regard with the first transaction of an NFT

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<sup>42</sup> K Grabers-von Boehm and others, ‘Intellectual Property Rights and Distributed Ledger Technology’, (*European Parliament*, October 2022)< [https://www.europarl.europa.eu/RegData/etudes/STUD/2022/737709/IPOL\\_STU\(2022\)737709\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2022/737709/IPOL_STU(2022)737709_EN.pdf) > accessed November 2022.

### 3.1 Offering an NFT on a marketplace

The process of offering an NFT on a dedicated marketplace involves three steps, each of which may be copyright relevant:

- a) an initial upload of the source of the NFT
- b) a presentation on the marketplace of the image represented by the NFT c)

the transaction itself

For the offering of an NFT, it is necessary to present an image of the work that the token represents, which, in light of Article 2 and Article 3 of the InfoSoc Directive, is considered as a reproduction of a work which is being made available to the public. This would mean that this second essential step in the process of selling an NFT would infringe copyright rules, and would thus block any such transactions.

Nevertheless, there may be a possibility of avoiding such infringement, through the exception provided by the InfoSoc Directive in Article 5 (3) lit. j) which states that:

‘Member States may provide for exceptions or limitations to the rights provided for in Articles 2 and 3 in the following cases:

(...)

use for the purpose of advertising the public exhibition or sale of artistic works, to the extent necessary to promote the event, excluding any other commercial use;’

However, there are certain uncertainties in regards with the applicability of this exemption. Firstly, the implementation of Article 5 by the Member States is not mandatory, and secondly, it is unclear whether the rule is in itself applicable to this novel circumstance: while the sale of an NFT can be comparable to a sale through auction or from a gallery, showcasing an image for advertising purposes, there is an essential argument against this comparison- that being the fact that a NFT is inherently not identical with the represented work.

Furthermore, a NFT works more like a certificate of ownership of the representation of the work, and not of the original work. This distinction between the work and its representation through a NFT is the main argument against the applicability of the exemption. Following this rationale, the use of an image of the original work could be interpreted as ‘any other commercial use’ in the light of Article 5 (3) lit. j), and thus by not being protected by this exemption, the consent of the author of the original work would be mandatory in order to avoid an infringement of Article 2 of the InfrSoc Directive.

On the contrary, if the NFT does represent rights in a physical work, the stipulations of Article 5 (3) lit j) would protect the use of the image for promoting the sale of a share in a physical artwork, if they would be implemented in the respective Member State.

Concerning the transaction of an NFT, it can be said that it does not produce any consequence in regards to reproduction of the work or the communication to the public.

However, it shall be assessed whether a transaction of a NFT is to be considered an act of ‘distribution’ as is to be understood from Article 4 (1) of the InfoSoc Directive.

Article 4 (1) InfoSoc Directive states the following:

‘Member States shall provide for authors, in respect of the original of their works or of copies thereof, the exclusive right to authorise or prohibit any form of distribution to the public by sale or otherwise.’

Given the fact that the sale of a NFT, in most cases does not transfer rights of ownership of the represented original work, the transaction can not be interpreted as a distribution in the sense of Article 4 (1). Furthermore, within European Law, the right of distribution and the exhaustion of it is linked to a tangible object, excepting the case of digital exhaustion in software, as it was presented in the decision of the CJEU in the Tom Kabinet case.

The same rationale can be followed in the situation in which the NFT entails in part or whole the ownership of a tangible object, in the sense that the transfer of the NFT itself is not subject of Article 4, as the NFT has the nature of a certificate of ownership and is distinct from the original work. However, the transaction of ownership of the work itself as a consequence of the sale of the NFT is subject to the right of distribution as it does not differ from a usual transfer of a physical work.

### **The US perspective**

While a more comprehensive study on the IP issues related to NFTs is yet to be published, at present moment and where it is possible, the copyright claims regarding the NFTs are being analyzed through the prism of current legislation.

In the United States, NFTs are considered a form of digital property and are thus being protected under copyright laws. Therefore, the creators of NFTs have the exclusive rights to reproduce, distribute and display their work. The copyright in the underlying work embodied in an NFT, such as a video or an image, is considered as to be having a separate regime as the NFT itself, similarly to EU approach.

The creator of the NFT can also assert copyright in the NFT as a separate ‘work of authorship’ if it contains original elements, such as the metadata or the smart contract that governs the NFT.

The US Copyright Act of 1976 governs also the niche of NFTs, despite the fact that the inclusion of the NFTs is not expressly stipulated, in the circumstance in which the NFTs are meeting the requirements of being an original work of authorship.

According to the Copyright Act of 1976, an original work of authorship is defined as a work created by an individual and is fixed in a tangible form of expression. In order for a work to be considered original and eligible for copyright protection, it must meet certain requirements outlined in the Copyright Act:

- Originality: the work must be original and not a copy of another work. It must have a minimal degree of creativity, in the sense that it must possess a small amount of unicity.
- Fixation: the work must be recorded or stored in a tangible form, which can be perceived, reproduced or communicated.
- Authorship: the work must be created by an individual and not be a work made for hire.
- Copyrightability: the work must fall within the categories of works that are eligible for copyright protection, such as literary works, musical works, dramatic works, pantomimes and choreographic works, pictorials, graphic and sculptural works, motion pictures and other audiovisual works, sound recordings and architectural works.

In summary, the US Copyright Act of 1976 applies to NFTs as it does to any other original work of authorship in a digital format. Furthermore, the Copyright Office has also recently released a statement recognizing NFTs as a type of digital asset that can be protected by copyright law, encouraging creators and sellers to register their NFTs with the Copyright Office, to benefit from a more extensive legal protection.

The copyright registration process for NFTs is similar to the process of registering other types of copyrighted works. In order to register a copyright for an NFT, the creator must submit an application to the US Copyright Office, along with a fee and a copy of the NFT. The application must include certain information about the NFT, such as the title, date of creation and the name of the creator.

It is important to note that while copyright registration is not mandatory, it is required in order to bring an infringement lawsuit in the US federal court. Also, if the NFT contains underlying works such as images or videos, it is also important to register the underlying works separately with the Copyright Office.



## 3.2 Trademark

### The EU perspective

The European trademark regulations may offer protection to NFTs that include marks such as logos or brand elements.

European Union Trademark (EUTM) system provides for trademark protection in all Member States of the European Union. To obtain EUTM protection, the trademark must be distinctive and not confusingly similar to existing trademarks. EUTM owners have the exclusive right to use their marks in connection with the goods or services for which they are registered.

If a non-fungible token is used in a manner that infringes on a trademark owner's rights, the trademark owner may have recourse to address the infringement, by filing a lawsuit or taking other legal action to stop the infringement and seek damages.

Furthermore, in order to have a certain degree of control over the risk of infringement, NFT marketplaces may have policies that address the matter, such as removing the infringing NFT from the marketplace or requiring the NFT creator to provide evidence of trademark ownership.

The EUIPO has issued guidelines with regards to the position of NFTs within the Niche Classification system and the interpretation of the terms 'virtual goods' and 'NFTs'.

Therefore, according to EUIPO, 'virtual goods' and NFTs, upon registration, would fall within Class 9, 'because they are treated as digital content or images.'<sup>43</sup> However, in EUIPO's perspective, the terms 'virtual goods' and 'NFTs' present an unacceptable lack of clarity and thus, express precision in describing the said goods or NFTs is demanded, in the sense that the specific content to which the goods are related or the type of item authenticated by the NFT (e.g. downloadable music authenticated by non-fungible tokens) must be clearly stated.

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<sup>43</sup>EUIPO, 'Virtual goods, non-fungible tokens and the metaverse' (EUIPO, 23 June 2022) <[https://euipo.europa.eu/ohimportal/en/news-newsflash/-/asset\\_publisher/JLOyNNwVxGDF/content/pt-virtual-goods-non-fungible-tokens-and-the-metaverse](https://euipo.europa.eu/ohimportal/en/news-newsflash/-/asset_publisher/JLOyNNwVxGDF/content/pt-virtual-goods-non-fungible-tokens-and-the-metaverse)> accessed November 2022

Furthermore, ‘the EUIPO recognizes that there are a number of important questions to resolve relating to, for example:

- The criteria for assessment of absolute grounds of refusal- is the perception of the average consumer the same in the metaverse? How should virtual goods and services be treated when assessing distinctive character/descriptiveness?
- The assessment of use of a virtual trademark- this is relevant in a number of areas, including assessing acquired and enhanced distinctiveness, use in the course of trade and genuine use. The all-encompassing territorial aspect of the metaverse raises particular issues, as does the question of whether only use in a virtual environment can be taken into account, or whether combined use in the real world is acceptable.
- Comparison of goods and services i.e., physical vs virtual-how should the criteria be applied? <sup>44</sup>

## **The US perspective**

In the United states, NFTs can also be protected under trademark law. Trademark law protects brands and logos that are used in commerce to identify and distinguish the goods or services of one person or entity from those of others. If an NFT contains a brand or a logo that is used in commerce, it can be protected under trademark law.

For example, if an NFT contains a brand or logo of a company, that company can assert trademark rights in the brand or logo. This can be useful for preventing others from creating and selling NFTs that use the same or similar ways of identification.

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<sup>44</sup> S Lester, A Kaupp-Roberts, DWalsh, ‘EUIPO guidance on NFTs and virtual goods provides welcome clarification for brands’ (*Mishcon*, 3 October 2022) <<https://www.mishcon.com/news/euiipo-guidance-on-nfts-and-virtual-goods-provides-welcome-clarification-for-brands> > accessed November 2022.

It is of importance to note that in order for a trademark to qualify for protection, it must be used in commerce. In other words, the NFT must be used in a commercial setting, such as being sold or offered for sale.

While the registration is not mandatory, it provides the registrant with a legal presumption of validity, exclusive rights to use the mark and the ability to bring legal action in case of infringement, to the federal court.

The registration of a trademark (including an NFT containing such a mark) is made with the US Patent and Trademark Office (USPTO), and is similar to the process of registering trademarks for other goods or services.

The first step in the process of registration is the conduction of a trademark search in order to ensure the availability of the mark to be registered (in other words, to assess whether there is a similar or identical mark already in use). Once the search is complete, the applicant can file an application with the USPTO, along with the required fee. The application must include information about the NFT, such as a description of the goods and services with which the NFT is used and a representation of the NFT- such as an image or a link to the location where the NFT can be viewed.

After the application is filed, the USPTO will conduct an examination to ensure that the trademark is eligible for registration. If the trademark is found to be eligible, it will be published for opposition, giving other parties and opportunity to object to the registration. If no objections are raised, or if any objections are overcome, the trademark will be registered.

In summary, NFTs can be registered as trademarks with the USPTO if they contain a brand or logo that is used in commerce. The process for registering a trademark for an NFT involves conducting a trademark search, filing an application with the USPTO and undergoing the USPTO examination. While the registration is not mandatory, it provides extensive protection. Furthermore, it is important to register the

trademark separately with the USPTO, as the trademark registration only applies to the brand or logo and not to the underlying work.

### **3.3 Data protection**

#### **The EU perspective**

The use of NFTs in the European Union is subject to the General Data Protection Regulation, which is a comprehensive data protection law that applies to all EU member states. The GDPR provides a set of data protection rights for individuals and sets out obligations for organizations that process personal data.

Under the GDPR the NFT creators, issuers and sellers must comply with the data protection requirements when processing personal data in connection with NFTs, which includes obtaining informed consent from individuals for the processing of their personal data, providing information about the data processing and ensuring the security of personal data.

Organizations that process personal data in connection with NFTs must comply with the GDPR, including:

- Obtaining informed consent from individuals, for the processing of their personal data.
- Providing information to individuals about the data processing, including the purpose of the processing and retention period.
- Ensuring the security of personal data, including implementing appropriate technical and organizational measures to prevent unauthorized access, disclosure or destruction of personal data.
- Responding to requests from individuals for access to their personal data and for the rectification or deletion of their personal data.

- Reporting data breaches to the relevant supervisory authority and to individuals if the breach is likely to result in a high risk to their rights and freedoms.

Organizations are also obligated to appoint a Data Protection Officer (DPO) if they carry out large- scale systematic monitoring of individuals or if they process certain types of sensitive personal data.

## **The US perspective**

In the United States, non- fungible tokens may be subject to data protection laws, depending on the type of information they contain. Furthermore, the US data protection laws vary by state, thus, being no federal law that would specifically govern the use of NFTs. In other words, based on the content of the non-fungible token, it may fall under the incidence of different laws, such as the following:

- HIPPA(Health Insurance Portability and Accountability Act): is a US law that regulates the use and dissemination of personal health information (PHI). It applies to healthcare providers, health plans and certain other entities that handle PHI and sets strict standards for protecting the privacy and security of this information.

In the circumstance in which an NFT would contain PHI within the understanding of HIPPA, then the entity creating, storing and handling the NFT must be in compliance with HIPPA regulations and to offer proper security and protection of the said information.

- Children’s Online Privacy Protection Act (COPPA) applies to the online collection of personal information from children under the age of 13. Similarly as above, in the circumstance in which an NFT platform or market would be in a position of collecting children’s personal information, there must be compliance with the COPPA regulations.

- California Consumer Privacy Act (CCPA): applies to the handling of personal information of California residents. If an NFT platform or market is operated in California or targets California residents, it must comply with the CCPA
- The General Data Protection Regulation (GDPR) is a data protection law that applies to organizations operating within the EU, and while not being directly applicable in the US, it is of importance as there are cases in which US companies may be subject to GDPR by processing personal data of EU citizens.

It is important to consider the type of information that the NFT contains and to ensure that the storage and handling of that information complies with applicable data protection laws. This can include but not be limited to taking measures to protect the confidentiality, integrity and availability of the data, implementing access controls and providing transparency about data collection and usage.

## CHAPTER 4. CONTRACTUAL CHALLENGES

As a general rule, in the physical world, upon acquiring an artwork, the rights of ownership are transferred from the author of the work to the purchaser. However, this process does not imply that the copyright of the said work will be also automatically transferred. This is an exclusive right of the author which is to be acquired only together with the consent of the owner of that right.

The same rule of copyright is applicable in the NFT area. The purchaser would only gain the right to hold the NFT and to further sell it, if not expressly stipulated. Thus, granting the copyright and other exclusive rights can be made through a smart contract or, with the valid consent of the author, it can be contained in the general terms of use of sale marketplaces.

### 4.1 Smart contracts

Smart contracts are computer programs that are designed to automatically execute the terms of a contract when certain conditions are met. They are stored on a blockchain network, which is a decentralized and distributed ledger that allows for the secure and transparent recording of transactions.

The basic function of a smart contract is to automatically execute predefined actions when certain conditions are met, these conditions are encoded in the contract's code and are triggered by events that occur on the blockchain network.

For example, in the context of NFTs, a smart contract can be set up to automatically transfer ownership of an NFT from one party to another when certain conditions are met, such as the receipt of payment.

Smart-contracts function based on the following steps:

- the terms of the contract are written in code and uploaded to the blockchain network

- the contract is stored on the blockchain network and is accessible to all users when certain conditions are met, the contract is automatically executed. For example, when a payment is received, the contract will automatically transfer ownership of the NFT from one party to another
- the execution of the contract is recorded on the blockchain network and is visible to all users
- once a smart contract is executed, it cannot be altered or deleted, ensuring that the terms of the contract are unchangeable.

As the code of the smart contract is permanently embedded into the purchase token- by this rendering it impossible to be replaced, modified or deleted, a certain security of transactions is given. Furthermore, as the obligations of the contract are automatically performed, this should give less space for legal disputes in the matter. However, as there no legislation at the moment concerning smart contracts it is still in question whether the smart contracts are binding. While there does not seem to be an actual reason for the smart contracts not to be considered binding, potential confusion might arise when they will be used in tandem with text based contracts.

Furthermore, through the use of smart contract technology, the transfer of the NFT can be controlled, either by delaying the transfer until certain conditions are met, or in order to offer protection to the rights to royalties towards the minter in case of resale.

Nevertheless, it is important to note that smart contracts are not immune to digital threats or human error, so it is highly desirable that they are properly tested and audited before deployment.

As above mentioned, in the context of non-fungible tokens, smart contracts can be used to automate the buying, selling, and transfer of NFTs on blockchain network. Below are the main characteristics of such contracts:

- Automation: smart contracts automate the process of buying, selling and transferring NFTs, eliminating the need for intermediaries such as lawyers or escrow agents



- **Transparency:** smart contracts are stored on a blockchain network, which is a public and transparent ledger. This allows for increased transparency and traceability of NFT transactions
- **Immutability:** smart contracts are stored on a blockchain network, which is a distributed ledger that is resistant to tampering and modification. This ensures that the terms of the contract are unchangeable once they are written into the code
- **Self-execution:** once the terms of the smart contract are met, the contract automatically executes, thereby enabling the transfer of the NFT from one party to another
- **Decentralization:** smart contracts are stored on a blockchain network, which is decentralized and not controlled by any single entity. This allows for increased security and resistance to censorship

## 4.2 Terms and conditions of NFT marketplaces

From a legal perspective, the terms and conditions of the NFT marketplaces are of great importance as they set out the rights and responsibilities of the marketplace, the creators and the buyers of NFTs.

Following are some of the key points that would be approached through the terms and conditions of NFT marketplaces:

- **Intellectual Property Rights:** the terms and conditions should clarify the rights and responsibilities of the marketplace, the creators and the buyers with regard to IP rights of the NFTs. This may include language specifying that the marketplace does not claim any ownership of the NFTs and that the creators retain their intellectual property rights
- **Representations and Warranties:** the terms and conditions should include representations and warranties by the creators and buyers regarding the NFTs such

as the NFTs being original works and not infringing on any other person's intellectual property rights

- **Liability and Indemnification:** the terms and conditions should set out the liability and indemnification provisions, which specify who is responsible for any damages or losses that may arise from the sale or use of the NFTs
- **Dispute Resolution:** the terms and conditions should include a mechanism for resolving disputes between the marketplace, the creators and the buyers. This may include language specifying that disputes will be resolved through arbitration or mediation
- **Governing Law:** the terms and conditions should specify the governing law that will apply to the agreement between the marketplace, the creators and the buyers. This will help to ensure that the agreement is enforceable and that disputes can be resolved in an appropriate forum

## CHAPTER 5. FINANCIAL REGULATORY CHALLENGES

Non-fungible tokens present several financial regulatory challenges, including:

- **Jurisdiction:** NFTs are decentralized digital assets that can be traded globally, making it difficult to determine the jurisdiction in which they should be regulated
- **AML/KYC:** NFTs are often traded on decentralized marketplaces which makes it difficult to implement anti-money laundering (AML) and know-your-customer(KYC) requirements that are typically required in traditional financial transactions.
- **Valuation:** the value of an NFT can be highly speculative, making it difficult to determine its fair value for tax or accounting purposes.
- **Securities laws:** some NFTs may be considered securities and fall under securities laws, but it's not always clear which particular NFTs would meet the criteria.
- **Taxation:** the tax treatment of NFTs is not yet clear, and there is a lack of consensus on how transactions involving NFTs should be taxed.
- **Consumer Protection:** NFT marketplaces are often decentralized and not subject to the same consumer protection laws as traditional financial markets, which makes it difficult to protect consumers from fraud and other risks.

## 1. Jurisdiction challenges

Jurisdiction challenges related to non-fungible tokens are occurring mainly due to the decentralized nature of blockchain technology and the fact that the NFTs can be created, bought, and sold across borders. This can make it difficult for any one jurisdiction to regulate the market or enforce laws related to NFTs.

Another challenge is that NFTs can represent a wide variety of assets, including digital art, collectibles, and even virtual real estate, which can create confusion as to which jurisdiction's laws apply to a particular NFT transaction.

Additionally, many countries and regions have not yet issued specific regulations on NFTs, which can create uncertainty for NFT buyers and sellers and make it difficult for authorities to enforce existing laws.

Furthermore, there are questions on how to apply tax regulations for capital gains on NFTs, as it also varies by country, state or region and also many governments haven't yet issued any specific regulations.

### 1.1 US jurisdiction challenges

The United States has seen a number of jurisdiction challenges related to NFT. One issue is that NFTs can be created, bought and sold using blockchain technology, which is decentralized and operates independently of any single jurisdiction.

Another issue is that NFTs can represent a wide variety of assets, which can create confusion as to which jurisdiction's laws apply to a particular NFT transaction.

Additionally, some NFTs may be considered securities which would fall under the jurisdiction of the Securities and Exchange Commission (SEC). However, the SEC has not yet issued specific guidance on the regulation of NFTs. Nevertheless, the agency has made a number of statements and taken actions related to NFTs that provide some insight into its thinking in the matter.

In December 2020, the SEC issued a statement warning investors about the potential risks of investing in NFTs, stating that some NFTs may be considered securities and therefore subject to federal securities laws. The agency also warned that some NFTs may be used to facilitate illegal activities such as money laundering or fraud.

In February 2021, the SEC also issued a statement that it(the SEC) would be scrutinizing the NFT market and that companies issuing NFTs must comply with federal securities laws.

In April 2021 the SEC issued a cease-and-desist order against a company selling NFTs that represented interests in commercial real estate. The SEC said that the company's offering of NFTs was an illegal securities offer.

The SEC also warned NFT platforms that they should register their platforms as securities exchanges or ATS (Alternative Trading Systems) if they meet the definition of an exchange.

In summary, the SEC has not yet issued specific guidance on the regulation of the NFTs, but it has indicated that it views some NFTs as securities and that companies issuing NFTs must comply with federal securities laws.

## 1.2 EU jurisdiction challenges

Jurisdiction challenges related to non-fungible tokens (NFTs) in Europe are similar to those in the United States. One issue is that NFTs can be created, bought and sold using blockchain technology, which is decentralized and operates independently of any single jurisdiction.

Some European Union states have not yet issued any specific regulations on NFTs and it varies from country to country.

### 1. Anti-money laundering and NFTs

Anti-money laundering (AML) regulations are designed to prevent the illicit use of financial systems to launder money. In the context of NFTs, AML regulations present several challenges:

- Decentralized marketplaces: NFTs are often bought and sold on decentralized marketplaces, which makes it difficult to implement traditional AML measures such as know-your-customer (KYC) and suspicious activity reporting (SAR).
- Anonymity: NFT transactions are often conducted anonymously, making it difficult to trace the flow of funds and identify potential money laundering activities
- Complex ownership: NFTs can have multiple owners and be transferred multiple times, making it difficult to identify the ultimate beneficiary of the funds.
- Lack of regulations: NFTs are still a relatively new phenomenon and there is currently a lack of regulation in the area.

To address these challenges, regulatory authorities are considering various solutions such as implementing stricter KYC and AML requirements for NFT marketplaces, monitoring transactions on the blockchain to detect suspicious activity, and developing regulations specific to NFTs.

## 2.1 Anti-money laundering NFTs-relevant regulations. US-EU comparison

### 2.1.1 European anti-money laundering regulatory framework

In Europe, the regulatory framework for anti-money laundering(AML) and countering the financing terrorism (CFT) is primarily governed by the Fifth Anti-Money Laundering Directive (5AMLD) and its national implementing measures.

As for the NFTs, the 5AMLD does not specifically mention them, but it does apply to providers engaged in exchange services between virtual currencies and fiat currencies and custodian wallet providers.

In the absence of specific NFT regulations, European regulators have advised that NFT marketplaces and other related service providers should conduct similar due diligence (CDD) and asses the money laundering and terrorist financing risks associated with their business.

The Financial Action Task Force (FATF)- an inter-governmental body that sets AML/CFT standards- also issued a guidance on virtual assets and virtual asset providers (VASPs) which includes NFTs. This guidance requires VASPs to comply with the same AML/CFT requirements as traditional financial institutions.

The European Banking Authority (EBA) also issued an opinion on the applicability of the EU AML/CFT framework to virtual currencies and related services. It stated that the framework would apply to providers of virtual currency exchange services and custodian wallet providers.

### FATF's position with regards to NFTs

The Financial Action Task Force (FATF) is an intergovernmental body that sets standards for combating money laundering and terrorist financing. In June 2019, FATF

issued its guidance on virtual assets and virtual asset providers (VASPs) which applies to non-fungible tokens as well.

According to FATF guidance, virtual assets are defined as ‘a digital representation of value that can be digitally traded, or transferred and can be used for payment or investment purposes.’<sup>45</sup> The definition includes NFTs, which are unique digital assets that can be bought, sold, or traded on blockchain-based marketplaces.

The FATF guidance requires VASPs, including those that operate NFT marketplaces, to comply with the same anti-money laundering (AML) and countering the financing of terrorism (CTF) requirements as traditional financial institutions. These include:

- Implementing customer due diligence (CDD) measures, including identifying and verifying the identities of customers and assessing the money laundering and terrorist financing risks associated with their business
- Reporting suspicious transactions to the relevant authorities
- Keeping accurate records of transactions for a certain period of time
- Implementing internal controls, such as a compliance program, to prevent and detect money laundering and terrorist financing

The guidance also calls on countries to establish a regulatory framework for VASPs, including NFT marketplaces, to ensure compliance with these standards.

### 2.2.2 US anti-money laundering regulatory framework

In the US, the regulatory framework for anti-money laundering (AML) and countering the financing of terrorism (CFT) is primarily governed by the Bank Secrecy Act (BSA) and its implementing regulations.

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<sup>45</sup>FATF, ‘The FATF’s focus on virtual assets’ <<https://www.fatf-gafi.org/en/publications/Virtualassets/Virtualassets.html#:~:text=The%20term%20'virtual%20asset'%20refers,safeguards%20as%20the%20financial%20sector>> accessed November 2022.



As for NFTs, the U.S. Crimes Enforcement Network (FinCEN) has issued guidance stating that certain NFTs may be considered a ‘convertible virtual currency’ and therefore subject to the BSA’s AML/CFT regulations.

According to FinCEN, entities that create, sell, or facilitate the exchange of NFTs may be considered ‘money transmitters’ and would be required to register with FinCEN, comply with AML/CFT regulations, and maintain records of transactions.<sup>46</sup>

The SEC also issued guidance on how it views certain NFTs as securities, and therefore subject to federal securities laws.

### FinCEN’s position with regards to NFTs

In May 2021, the U.S. Financial Crimes Enforcement Network issued guidance on how certain types of non-fungible tokens (NFTs) may be considered a ‘convertible virtual currency’ and therefore subject to the BSA and its implementing regulations for anti-money laundering and countering the financing of terrorism.

According to FinCEN, NFTs that are used as a medium of exchange, store of value, or unit of account, and are interchangeable with other tapes of virtual currency or real currency, may be considered a ‘convertible virtual currency’.

Entities that create, sell, or facilitate the exchange of NFTs that are considered a ‘convertible virtual currency’ may be considered ‘money transmitters’ under the BSA and would be required to register with FinCEN, comply with AML/CFT regulations and maintain records of transactions.

This guidance also applies to entities that are involved in the conversion of NFTs to other forms of virtual currency or real currency.

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<sup>46</sup>FinCEN, ‘Application of FinCEN’s Regulations to certain Business Models Involving Convertible Virtual Currencies’ ( FinCEN, 9 May, 2019) < <https://www.fincen.gov/sites/default/files/2019-05/FinCEN%20Guidance%20CVC%20FINAL%20508.pdf> > accessed November 2022.

The FinCEN guidance also made it clear that this applies to all forms of virtual currency, including NFTs, and that companies that are involved in such transactions are subject to the same anti-money laundering and know-your-customer regulations as other financial regulations.

### 3. Taxation challenges

The tax treatment of non-fungible tokens can vary depending on the jurisdiction and the specific facts and circumstances of each transaction. However, in general, NFTs may be subject to various taxes, such as income tax, capital gains tax and value-added tax(vat).

In the United States, NFTs are considered a form of property for tax purposes and are subject to the same tax rules as other types of property. This means that when an individual or business acquires an NFT, they may be subject to income tax on the fair market value of the NFT at the time of the acquisition. When an individual or business sells or disposes of an NFT, they may be subject to capital gains tax on the difference between the fair market value at the time of acquisition and the fair market value at the time of sale or disposition.

In the European Union, NFTs may be subject to VAT depending on the country where the transaction takes place. Some countries may treat NFTs as digital services and subject them to the standard VAT rate, while other countries may treat NFTs as goods and subject them to reduced VAT rates and exemptions.

#### 3.1 NFTs Tax regime in Europe

The tax regime of the NFTs in the European Union can vary depending on the country where the transaction takes place. However, in general, NFTs may be subject to various taxes, such as income tax, capital gains tax, VAT.

- **Value-Added Tax (VAT):** NFTs may be subject to VAT depending on the country where the transaction takes place. Some countries may treat NFTs as digital services and subject them to the standard VAT rate, while other countries may treat NFTs as goods and subject them to reduced VAT rates or exemptions.  
For example, in Germany, NFTs may be subject to VAT depending on the specific facts and circumstances of each transaction, while in France, NFTs may be subject to VAT at the standard rate of 20% if they are considered digital services, or reduced VAT rates of 5.5% or 2.1% if they are considered goods.
- **Capital Gains Tax:** capital gains tax is applied to the profit made from the sale of the NFTs. The tax rate will depend on the country where the transaction takes place. For example, in Germany, NFTs may be subject to capital gains tax if the NFTs are considered as part of an individual's private assets and are held for more than one year, while in France NFTs may be subject to capital gains tax if the NFTs are considered as part of an individual's private assets and are held for more than two years. In Italy, on the other hand, NFTs are subject to capital gains tax at the standard rate of 26% for individuals and 24% for corporations.
- **Income tax:** the income generated by the sale of NFTs is subject to income tax depending on the country where the transaction takes place. For example, in Germany, NFTs may be subject to income tax if the NFTs are considered as part of an individual's business assets, the German income tax rate being between 14% and 42%. In France, the same conditions would apply, with a slightly different tax rate (between 11% and 45%).

### 3.2 NFTs Tax regime in the US

In the United States, NFTs are subject to tax laws, including federal income tax and state sales tax. The specific tax treatment of NFTs depends on various factors, including the type of NFT and the manner in which it is acquired or used.

The tax treatment of NFTs as property is based, even though not expressly integrated, on guidance from Internal Revenue Service (IRS) according to which cryptocurrencies are treated as property for federal tax purposes.

The IRS's notice was issued in 2019 stating, federal taxes apply to the sale or exchange of non-fungible tokens as they are considered a form of property.<sup>47</sup> The tax rate will depend on the individual's tax bracket and the length of time the NFT was held. If an NFT is possessed for more than a year, it would be subject to the long-term capital gains tax rate, which is lower than the short-term rate.

If an NFT is held for less than a year, it would be subject to the short-term capital gains tax rate, which is equivalent to the individual's ordinary income tax rate. Additionally, if an NFT is used for business or investment purposes, it may be subject to self-employment tax rate.

For state sales tax purposes, NFTs may be subject to sales tax in the state where the buyer is located or where the NFT is used. However, the tax treatment of NFTs for sales tax purposes can vary from state to state and is important for tax payers to familiarize themselves with the specific rules and regulations in their state.

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<sup>47</sup> <https://www.irs.gov/pub/irs-drop/n-14-21.pdf>

## CHAPTER 6. CONCLUSIONS

The rise of Non-Fungible Tokens as a novel asset class in the digital world has also brought about concerns regarding their legal, ethical and environmental implications.

While the development of the legal framework surrounding the NFTs has left space for 'grey areas' and has also posed challenges due to its lack of uniformity, certain key legal considerations are to be taken into account and, moreover, are offered a certain degree of guidance through the existing regulatory framework.

As presented in previous chapters, one of the main legal issues surrounding NFTs is the question of ownership and copyright. While NFTs allow creators to monetize digital assets and provide a means for buyers to own a unique verifiable copy of a digital asset, they do not necessarily confer ownership on the underlying intellectual property. Therefore, it is important for creators and buyers to ensure that they have the appropriate rights and licenses to use the underlying intellectual property.

Furthermore, the range of financial obligations under which the NFT might become liable spans from anti-money laundering regulations, to more onerous obligations where investment laws such as securities regimes would become triggered. It will be applicable the law within the jurisdiction in which the sale ( of the NFT or of the related services) has been made. However, a multi-jurisdictional analysis would be often required, as the inherent nature of the NFTs is a global one.

Given the element of globality, the participants to such trading should act with awareness towards the legal and regulatory framework of the different jurisdictions under which such a trade might be bound. However, as already mentioned, the by being a new asset class, the regulatory framework in this field is still under development, which leaves place at time being for both fraudulent actions and errors made by lack of familiarity with the topic.

One of the key issues is dealing with access to NFTs on death, since (like crypto assets) they can only be accessed by a unique personal key and password. Given the very real risks of these potentially money-spinning assets being lost forever (and there are a frightening number of well-known examples of private keys and passwords to digital assets being forgotten or misplaced), investors should at the very least take a few simple steps to mitigate these risks.

Yet another field that proves the global scarcity of legislative guidance of NFTs is the taxation field. As it was not mainly included in texts that deal with crypto-assets

investors find it difficult to determine the position of the NFT from the prism of taxation.

Other legal issues related to NFTs may include contract law, privacy and data protection. Smart contracts are often used in the creation and sale of NFTs, which raises questions about their enforceability and liability in case of disputes. Furthermore the use of personal data in the creation and sale of NFTs raises questions about privacy and data protection laws.

Beyond legal considerations, NFTs have also raised ethical concerns related to their impact on the environment. The process of creating and selling NFTs requires a significant amount of energy, leading to concerns about their carbon footprint and environmental impact.

To conclude, while the NFTs have the potential to revolutionize the value and trade of digital assets, it is clear that the development of this niche brings along a vast amount of challenges.

# ABSTRACT

(GERMAN)

Der sich rasch entwickelnde Trend der Tokenisierung, der als Prozess der Digitalisierung von Vermögenswerten oder Rechten auf einem verteilten Ledger - wie einer Blockchain - beschrieben werden kann, umfasst auch nicht-ersetzbare Token (NFTs).

Obwohl nicht-ersetzbare Token bereits vor etwa einem Jahrzehnt in der digitalen Welt auftauchten, haben sie erst in letzter Zeit an Bedeutung und Aufmerksamkeit gewonnen. Doch trotz des zunehmenden Bedarfs, ist das Verständnis für ihr Wesen noch nicht weit verbreitet.

Um diese Gegenstände besser zu verstehen, sollten wir klären, was ein NFT sein kann und was seine Hauptmerkmale sind. Jedes Kunstwerk, einschließlich Videos, Songs, Fotos, Spiele und Apps, kann zu einem Non-Fungible Token werden.

("NFTs") - d.h. auf einer Blockchain gespeicherte Eigentumszertifikate, die in der Regel mit einem digitalen Vermögenswert verbunden sind, wie z.B. visuelle Kunst, Videos, Musik oder Sammlerstücke."<sup>48</sup>

"Ein NFT ist ein digitaler Vermögenswert, dessen Einzigartigkeit und Eigentum mithilfe der Distributed-Ledger-Technology (DLT) nachgewiesen und überprüft werden kann."<sup>49</sup>

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<sup>48</sup>P Bine and others, 'Regulatory approaches to Nonfungible Tokes in the EU and UK' (*skadden*, 15 iunie 2021 < <https://www.skadden.com/insights/publications/2021/06/regulatory-approaches-to-nonfungibletokens> > abgerufen im Oktober 2022.

<sup>49</sup>Clifford Chance, 'Non-Fungible tokens:the global legal impact ' (*Clifford Chance iunie 2021*) <<https://www.cliffordchance.com/content/dam/cliffordchance/briefings/2021/06/non-fungibletokens-the-global-legal-impact.pdf> > abgerufen im Mai 2022.

Die wichtigsten Merkmale dieser Token sind: Unteilbarkeit, Authentizität, Nicht-Interoperabilität, Handelbarkeit, Interaktion mit mehreren Ökosystemen, Liquidität, Programmierbarkeit, Begrenztheit.

Die rechtlichen Herausforderungen, die sich in diesem Bereich ergeben können, scheinen sehr komplex zu sein, was sowohl auf die Neuartigkeit des Themas als auch auf die zahlreichen Varianten zurückzuführen ist, die der Prozess der Token-Erstellung und des Verkaufs beinhalten kann.

#### **• Themen im Bereich des geistigen Eigentums**

Gemäß der Regel des Eigentumsrechts - sofern nicht ausdrücklich angegeben, beinhaltet der Verkauf einer Kopie eines kreativen Werks nicht die Übertragung des Eigentumsrechts - "überträgt der Verkauf von NFT nicht notwendigerweise das zugrundeliegende Eigentumsrecht an dem Werk, das 'außerhalb der Kette' (off-chain) existiert, auf den Käufer".<sup>50</sup>

Da nicht jeder, der am NFT-Markt teilnimmt, mit den Beschränkungen für geistiges Eigentum vertraut ist, kann es zu einer Haftung für die Verletzung von Eigentumsrechten kommen. Es kann zu Situationen kommen, in denen der Käufer eines NFT glauben könnte, dass die dem NFT zugrunde liegende Kunst ebenfalls durch den Kauf erworben wurde.

#### **• Vertragsrechtliche Themen**

Was den Wert des NFT betrifft - den Wert, der durch den Verkauf erzielt werden soll, oder sogar die Frage, ob das Eigentum an dem NFT fraktioniert werden kann -, so "wird dies weitgehend durch die wirtschaftlichen Gründe für die Ausgabe des NFT bestimmt. Liegt der Wert beispielsweise in der Beschränkung eines NFT oder des zugrunde liegenden Vermögenswerts, so kann ein Emittent die Fraktionierung einschränken wollen (und muss sicherstellen, dass er diese Beschränkungen durchsetzen kann), und die Käufer können diesbezügliche Zusicherungen verlangen. Ist das NFT oder der Basiswert jedoch von hohem Wert, kann die Aufteilung des NFT

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<sup>50</sup> G J Chinlund, K S Gordon, 'What are the copyright implications of NFTs?' (*Reuters*, 29 octombrie 2021) <<https://www.reuters.com/legal/transactional/what-are-copyright-implications-nfts-2021-10-29/>> abgerufen im September 2022.



(ohne Aufteilung des Basiswerts) Investitionsmöglichkeiten für diejenigen schaffen, die sich dies sonst nicht leisten könnten. Diese Faktoren bestimmen auch (zum Beispiel) den Inhalt von Verkaufsbedingungen oder intelligenten Verträgen und den geltenden Rechtsrahmen".<sup>51</sup>

- **Finanzielle Themen**

Das Spektrum der finanziellen Verpflichtungen, für die der NFT haftbar gemacht werden könnte, umfasst Vorschriften zur Bekämpfung der Geldwäsche und schwerwiegendere Verpflichtungen, wenn Investitionsgesetze wie Wertpapiervorschriften in Kraft treten würden. Es gilt das Recht des Landes, in dem der Verkauf (des NFT oder der damit verbundenen Dienstleistungen) getätigt wurde. Da NFTs jedoch ihrem Wesen nach global sind, ist häufig eine Analyse unter Berücksichtigung mehrerer Rechtsordnungen erforderlich.

- **Steuerwesen**

Ein weiterer Bereich, der die allgemeine Begrenztheit der legislativen Richtlinien für NFTs zeigt, ist der Steuerbereich. Da dieser Bereich in den Texten, die sich mit Krypto-Vermögenswerten befassen, nicht enthalten ist, ist es für Investoren schwierig, die Position von NFTs durch die Perspektive der Steuerbereich zu bestimmen.

- **Eigentumsrecht**

Im Allgemeinen wird das für einen Vermögenswert geltende Eigentumsrecht durch den Ort bestimmt, an dem sich der Vermögenswert selbst befindet. Während es für die Möglichkeit, ein NFT zu verkaufen oder zu versichern, von großer Bedeutung ist, das geltende System zu bestimmen, stellt sich die Frage, ob es sich bei einem NFT um eine einzigartige Kopie eines Vermögenswerts handelt und nicht um den zugrunde liegenden Vermögenswert selbst.

Außer rechtlichen Überlegungen haben NFTs auch ethische Bedenken hinsichtlich ihrer Umweltauswirkungen aufgeworfen. Der Prozess der Erstellung und

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<sup>51</sup> Osborne Clarke, 'What are the legal issues around NFTs?' (Osborne Clarke, 12 octombrie 2021) <<https://www.osborneclarke.com/insights/what-are-legal-issues-around-nfts> > abgerufen im Oktober 2022.

des Verkaufs von NFTs erfordert eine beträchtliche Menge an Energie, was zu Bedenken hinsichtlich ihres CO2-Fußabdrucks und ihrer Umweltauswirkungen führt.

Zusammenfassend lässt sich sagen, dass NFTs zwar das Potenzial haben, den Wert und die Marktfähigkeit digitaler Vermögenswerte zu revolutionieren, dass die Entwicklung dieser Nische jedoch auch eine Reihe von Herausforderungen mit sich bringt.

**ABSTRACT**

**(ENGLISH)**

The rapidly evolving trend of tokenization, which can be described as the process of digitalizing assets or rights on a distributed ledger- such as a blockchain- includes also the Non-Fungible Tokens.

While Non-Fungible Tokens have made their appearance in the digital field approximately a decade ago, only recently they gained exposure and attention. However, despite the growing interest, there still exists a wide spread lack of understanding of their nature.

In order to better understand these items, one should clarify what can constitute an NFT and also which are its main characteristics. Any piece of art including videos, tracks, photographs, games, apps can become a Non- Fungible Token.

‘(NFTs) — i.e., certificates of ownership stored on a blockchain that are typically associated with a digital asset, such as visual art, videos, music or collectibles ‘<sup>52</sup>

An NFT is a digital asset whose uniqueness and ownership can be demonstrated and verified using distributed ledger technology (DLT).’<sup>53</sup>

The main characteristics of NFTs are: indivisibility, authenticity, non-interoperability, tradability, interaction with multiple ecosystems, liquidity, programmability, scarcity.

There is a seemingly wide range of complexity of legal challenges that can be reached in this field, due to both the novelty of the subject and the multitude of the variations that the process of creating-minting-selling the tokens can contain.

- **Intellectual property issues**

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<sup>52</sup> <https://www.skadden.com/insights/publications/2021/06/regulatory-approaches-to-nonfungibletokens>

<sup>53</sup> <https://www.cliffordchance.com/content/dam/cliffordchance/briefings/2021/06/non-fungibletokens-the-global-legal-impact.pdf>

Following the rule of copyright- that unless explicitly stipulated, selling a copy of any creative work does not include the transfer of the copyright- the sale of ‘the NFT does not necessarily transfer the underlying copyright in the work which exists "off-chain" to the purchaser.’<sup>54</sup>

As not everyone who participates in the NFT market is familiar with the restrictions in regard to copyrighted works, an infringement liability is very probable to occur. Situations might occur where the purchaser of an NFT might be under the belief that through the purchase also the underlying art associated with the NFT was acquired.

- **Contractual matters**

As to the value of the NFT- the value that is expected to be generated from the sale, or even whether it its ownership can be fractioned- this ‘will largely be driven by the commercial rationale for issuing the NFT. For example, if the value lies in the scarcity of an NFT or the underlying asset, an issuer may want to restrict fractionalization (and must ensure it can enforce those restrictions), and purchasers may seek assurances in that respect. However, if the NFT or the underlying asset is high-value, fractionalization of the NFT (without dividing the underlying asset) may open up investment opportunities for those otherwise unable to afford it. Those factors will also determine (for example) the content of any conditions of sale or smart contract and the applicable regulatory framework.’<sup>55</sup>

- **Financial matters**

The range of financial obligations under which the NFT might become liable spans from anti-money laundering regulations, to more onerous obligations where investment laws such as securities regimes would become triggered. It will be applicable the law within the jurisdiction in which the sale ( of the NFT or of the related services) has been made. However, a multi-jurisdictional analysis would be often required, as the inherent nature of the NFTs is a global one.

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<sup>54</sup> <https://www.reuters.com/legal/transactional/what-are-copyright-implicationsnfts-2021-10-29/>

<sup>55</sup> <https://www.osborneclarke.com/insights/what-are-legal-issues-around-nfts>

- **Taxation**

Yet another field that proves the global scarcity of legislative guidance of NFTs is the taxation field. As it was not mainly included in texts that deal with crypto-assets investors find it difficult to determine the position of the NFT from the prism of taxation.

- **Property law**

Generally, the property law which governs an asset is determined by the location of the asset itself. While it is of great importance to identify the governing system over one's ability to sell or secure an NFT, further questions are bound to arise from the fact that an NFT represents rather a unique copy of an asset and not the underlying asset itself.

Beyond legal considerations, NFTs have also raised ethical concerns related to their impact on the environment. The process of creating and selling NFTs requires a significant amount of energy, leading to concerns about their carbon footprint and environmental impact.

To conclude, while the NFTs have the potential to revolutionize the value and trade of digital assets, it is clear that the development of this niche brings along a vast amount of challenges.