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COMMENTARY

NON-FUNGIBLE TOKENS AS A WAY TO PROTECT GLOBAL INTELLECTUAL PROPERTY

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ABSTRACT

Blockchain technology is increasingly being recognized worldwide as a cornerstone of security and stability in the digital realm. The Internet, often viewed as a seemingly chaotic, unpredictable, and insecure environment, is experiencing a significant paradigm shift thanks to disruptive innovations such as blockchains, which provide a robust mechanism to ensure the integrity of the global information flow. While the original purpose of this technology was to facilitate cryptocurrencies, its applications have since broadened, permeating law, business, and more recently, sectors like art and gaming. In this context, Non-Fungible Tokens (NFTs) are on the cusp of becoming a mainstream asset class. These unique digital assets, intricately tied to Intellectual Property, present an unexplored avenue for legal and business applications. This paper assesses the potential uses of NFTs for to protect global IP. The study further suggests an analogous interpretation of existing norms that regulate the connection with NFTs and local regulations, thus laying the groundwork for an initial self-regulatory framework. In conclusion, NFTs are poised to revolutionize IP protection globally. However, from a legal perspective, it also represents the necessity to develop a regulated self-regulatory system to frame such technology. As part of future research, we propose the creation of legal standards to accept and introduce NFTs as part of the IP protection laws.

Keywords: *Blockchain technology, Non-Fungible Token, cryptocurrency, eretherium, global IP, intellectual property*

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Introduction

Non-Fungible Tokens (NFTs) are the latest application of the disruptive blockchain technology. Combining blockchain technology with smart contracts to create unique tokens, NFTs are a new kind of cryptographic token that represents ownership over digital or physical assets. NFTs are transforming the system of digital content ownership, thus giving content creators a whole new degree of control over their work, especially with regards to the worlds of digital art and collectibles, amongst many other possibilities of utilization, some yet to be invented.

Yet the adoption and growth in the use of NFTs have raised several issues regarding this still unregulated area of the Intellectual Property (IP) protection on a tokenized world, and the acceptance of it in the "physical" legal system.

Non-fungible tokens (NFTs) are one-of-a-kind digital assets that generate digital scarcity by virtue of the fact that they cannot be duplicated or divided. In addition to digital collectibles, music, artwork, and in-game tokens, they have numerous other applications. Collectibles, game items, digital artwork, event tickets, domain names, and ownership records for tangible or virtual assets are some examples.

Two elements emerge that demand further elucidation: the notion of fungibility and the tokenized characteristics of the NFT. When something is fungible, it means that any like-kind unit of that asset can be exchanged for it. Equally applicable to cryptocurrencies such as Bitcoin and Ethereum is a single dollar, which is equivalent to any other dollar in circulation. Moreover, assets that are fungible are divisible, which means they can be divided into smaller fractions of units with identical characteristics. To put it simply, fungible assets lack any discernible characteristics.

Conversely, non-fungible assets are distinct and indivisible, thereby precluding the free exchange or substitution of such assets with comparable ones. For example, a painting such as "Monalisa" is an example of a unique asset that cannot be freely exchanged for any other asset of a similar nature. Irrespective of the feasibility of duplication, a non-fungible asset will retain its uniqueness.

To be more precise, NFTs are also non-fungible, which signifies that they are all distinct and cannot be freely exchanged or substituted for one another. This distinctiveness generates scarcity.

As we have mentioned before, the "*Monalisa*" has an intrinsic value due to this uniqueness (translated into scarcity) and its insanely high demand. As Sokolin (2021) puts it: "Another aside on value. The Monalisa is original and valuable. A poster of the Monalisa is not valuable, despite being nearly identical in visual information. A reproduction of the Monalisa, even if perfect stroke-for-stroke, is similarly not valuable, because it is not the original. Therefore, the art is valuable not for its collection of particular atoms in some particular order, but for its historical and social context. Recreating the object does nothing, because it does not contain the same social history."

Tokens, which are cryptocurrencies lacking their own blockchains, contribute to the tokenized nature of the NFT. In contrast, they constitute a digital asset atop a blockchain or cryptocurrency, signifying the right to something.

Additionally, Di Angelo and Salzer (2020) state, "Tokens are components of an application, which is frequently a decentralised application" (DApp). DApps are peer-to-peer network applications that lack centralised control. One sector where DApps have had the greatest influence is the gaming industry.

Moreover, in addition to the aforementioned attributes, it is crucial to emphasise that a smart contract, which is a type of blockchain on the Ethereum blockchain, verifies and safeguards the uniqueness of an NFT, irrespective of the technology employed by the token. Non-fungible tokens, as noted by Di Angelo and Salzer (2021), "are uniquely identified by individual bit patterns, such as numbers, and the contract must associate each token with its owner." Furthermore, the cryptographic mechanisms of the underlying blockchain protect the ledger.

Lastly, smart contracts may be integrated into the code of NFTs to enable the automatic execution of the contract's terms upon the fulfilment of predetermined conditions. Its application could include

stipulating that the NFT creator is entitled to a portion of the transaction proceeds for each sale of the NFT.

Non-fungible tokens (NFTs) offer an innovative means of safeguarding worldwide intellectual property (IP) rights. Using a blockchain to tokenize intellectual property assets such as patents, digital art, and music into unique, verifiable, and immutable tokens enables creators to establish irrefutable proof of ownership. This digital provenance mitigates disputes regarding ownership and originality by being immutable and transparent. In addition, smart contracts can be implemented via NFTs to automate royalty payments upon asset transfers, thereby ensuring that creators continue to profit from secondary sales. The decentralised characteristics of blockchain technology ensure that these advantages transcend geographical boundaries, thereby promoting global IP rights protection and democratisation.

NFTs as certificates

A non-fungible token (NFT) certifies the ownership, authenticity, scarcity, and durability of a specific item. The convergence of these attributes possesses the capacity to fundamentally reshape entire sectors of the digital economy, thereby engendering novel prospects and obstacles that necessitate resolution.

When developing the ERC 721 NFT Standard, Entriken et al. (2018) foresaw three primary applications for NFTs: ownership representation of digital or physical assets, including real estate, unique artwork, and collectible cards; and the creation of "negative value assets" (loans, obligations, and other responsibilities). NFT art and the gaming industry, in particular, shall be examined as three of the most auspicious domains for NFT growth and disruption, in accordance with their classification.

As an alternative to conventional art, NFT art is currently an option for emerging artists. NFTs enable the purchase and sale of digital artwork, typically via the Ethereum blockchain.

In fact, NFTs appear to be a highly effective method of securing the digital ownership of a blockchain-based intellectual property right by ensuring the integrity of information that can be traced back to its original owner through blockchain encryption. In addition to serving as digital "proof-of-ownership," ownership tokens are also highly transferable.

By utilising an emerging solution, the NFTs are providing greater stability and protection to content creators and artists around the world and fostering the growth of a secondary market.

By leveraging smart contracts integrated into a blockchain, this technology generates a fresh worldwide demand for crypto-actives, which are actives, and enables the valuation and trading of titles (NFTs) owned by content creators or artists as an alternative means of monetizing and protecting their work. This technology facilitates the verification and certification of the intellectual property of the subject under consideration. Irrespective of any ownership transfers, the creator will retain sole responsibility for its attribution; furthermore, the blockchain serves as evidence of its authenticity.

The inherent architecture of blockchain enables comprehensive record-keeping, encompassing transactions and transfers of ownership. Smart contracts are utilised for the purpose of precisely monitoring individual properties in chronological order.

Because NFT art is an innovative way for collectors and artists to collaborate by providing the artist direct access to their audience without the need for intermediaries such as auction houses or galleries, this provides digital artists with new expansion opportunities.

Tokenized art offers visual artists an alternative means of disseminating digital collectibles without the need to establish an online store. Furthermore, musicians may find NFTs beneficial, as the EU Blockchain Observatory (2021) states that "this facilitates a more precise tracking of revenue generated by a specific song on blockchain-based streaming platforms, while also providing artists with a genuinely transparent method to distribute their songs." This potentiality exemplifies the application of the "negative-value" concept proposed by Entrinken et al. (2018): the artist receives royalties for each instance his song is streamed on blockchain-based platforms.

Facilitating access to potential buyers while granting artists greater autonomy over the distribution of their works and the amount of profit they generate. Beckman (2021) argues that in this situation, artists

receive the complete payment for their work, which grants them the autonomy to set their own price. Additionally, individuals can purchase original artwork directly from the artists, eliminating any concerns regarding a commission being taken by an intermediary (Beckman, 2021; Chevet, 2018).

The NFT ecosystem must also be utilised by conventional art spaces, as is the case with Christie's, a preeminent international art auction house. Christie's has begun to depend on MakersPlace for assistance with the emerging digital trend, recognising the potential for an art world in which even younger cohorts, who are already familiar with digital creations, can make investments.

Through the conversion of artworks into distinct digital assets hosted on the blockchain, artists are able to safeguard their copyright and provide irrefutable evidence of ownership and authenticity. By implementing this degree of security, unauthorised duplication is thwarted and the originality and worth of the creator's work are preserved. Moreover, by means of integrating smart contracts, artists can be guaranteed automatic royalties for every subsequent sale of their work, thereby guaranteeing their ongoing financial gain from the recognition of their creation. Hence, by democratising and fortifying the safeguarding of artistic creations, NFTs promote a more equitable milieu for creators within the realm of digital art.

Legal Challenges Surrounding the New IP Protection

Thus far, we have witnessed the upheaval that the expanding use of NFTs has wreaked on in critical sectors of the digital economy. Nevertheless, this type of disruption (as well as any potential future disruptions) is not devoid of hazards and deficiencies.

The European Union is currently investigating concerns pertaining to conflicts of jurisdiction in the context of NFT operations and the intellectual property rights of content creators in cases where copyright is transferred but the original author of the NFT retains ownership (EU Blockchain Observatory, 2021).

Furthermore, the matter of taxation presents an additional challenge, given the ambiguity surrounding the tax treatment of crypto-assets, particularly NFTs. The taxation of NFT operations is further complicated by their very nature; for instance, whether a jurisdiction classifies an NFT as property or an investment could result in varying forms of taxation. This is just one illustration of the complexity associated with the taxation of NFT operations. As of now, the proliferation of non-fungible tokens (NFTs) has caused significant disruption in several critical sectors of the digital economy. Despite this, such disruption (and the possibility of future disruption) is not devoid of dangers and deficiencies.

As well as concerns regarding the intellectual property rights of a content creator in cases where the copyright is transferred and the author of the NFT retains the role of the original creator, the European Union is investigating conflicts of jurisdiction pertaining to NFT operations (EU Blockchain Observatory, 2021).

Furthermore, the tax treatment of crypto-assets, particularly NFTs, is still unknown, which makes taxation an inherently complex subject. An instance of the complexity surrounding the taxation of NFT operations is the fact that appropriate taxation is further complicated by the fact that jurisdictional classification of NFTs as either property or investments, which could result in varying forms of taxation, to name a few.

To navigate through these difficult issues, Ossio *et al*. (2021) suggest that a NFT operator should look at a variety of factors "including the nature of the crypto asset, what it represents, its intended use and whether any analogies can be drawn from the relevant

Ossio *et al*. (2021) note that most jurisdictions do not yet have legislation or regulations specifically applicable to NFTs, but a host of existing regulations may still apply. This would depend on:

i. the token's characteristics and features;
ii. the activities performed in respect of such token; and;
iii. the territorial scope of the particular regulatory framework.

Given the lack of specific legal guidelines to deal with NFT operations, and until there is further studies and regulation, Kirkpatrick, Roniger and Mills (2021) suggest that "unless and until NFT-specific guidance is provided, companies should look to guidance on analogous services and products." Surely existing IP laws and the anteriority principle shall still apply.

Regular Intellectual Property (IP) protection framework principles aim to create a conducive environment for innovation and creativity by providing exclusive rights to creators and inventors. So far, the key principles that underpin these frameworks are:

i. **Exclusivity**: IP rights grant owners an exclusive right to use, sell, or license their creation for a certain period. This exclusivity helps to foster creativity and encourages further innovation.
ii. **Transferability**: IP rights can be assigned or licensed to others. This principle allows for the commercialization of intellectual property, enhancing its value.
iii. **Time-Limited Rights**: Most IP rights, such as patents and copyrights, are granted for a specific period. After this term expires, the protected work typically enters the public domain and can be used freely.
iv. **Territoriality**: IP rights are typically enforced within the jurisdiction they were granted. This principle can pose challenges in the globalized digital age where IP infringement can easily occur beyond national borders.
v. **Disclosure**: In some areas of IP, such as patents, the protection is granted in exchange for the disclosure of the invention to the public. This principle encourages the sharing of knowledge while still granting the inventor a period of exclusive use.
vi. **Balance of Interests**: IP frameworks strive to balance the interests of the IP rights holders and the public. While creators and inventors are granted exclusive rights, limitations like fair use doctrines ensure that the public can also benefit from cultural and scientific advancements.
vii. **Enforcement**: IP laws are accompanied by enforcement mechanisms and penalties to deter infringement and provide remedies to rights holders.

While these principles provide a foundation for traditional IP frameworks, the emergence of new technologies like blockchain and NFTs calls for their reassessment and evolution to suit the digital age, and the lack of state regulation for it, makes the need for a self-regulatory system within the NFT ecosystem even more pressing. However, as we navigate the nascent field of using Non-Fungible Tokens (NFTs) for Intellectual Property (IP) protection, a new set of legal challenges emerges.

Primarily, the decentralized nature of blockchain technology, which underpins NFTs, poses jurisdictional dilemmas, making it difficult to enforce traditional copyright laws and infringement penalties across borders. Furthermore, issues of digital art being tokenized without the original creator's consent bring about concerns of authorship and rights verification. As NFTs can be created by anyone, ensuring rightful ownership before tokenization is a significant challenge. Additionally, the use of smart contracts for automated royalty distribution introduces complexities in contract law, as these agreements may not always comply with the regulatory stipulations of different countries. Thus, these legal challenges call for the development of comprehensive, international legal frameworks to govern the use of NFTs for IP protection.

Conclusion

The legal impacts of this decentralized legal system are huge, but part of our close-future reality and that needs to be addressed by regulators and law now, alongside with further developments in token standards. Nonetheless the digital landscape is experiencing a transformational shift with the advent of blockchain technology and Non-Fungible Tokens (NFTs). As unique, immutable, and verifiable digital assets, NFTs hold tremendous potential for enhancing the global Intellectual Property (IP) protection landscape by offering a novel way for creators and inventors to assert ownership, authenticate their work, and ensure fair compensation for their innovation. However, the integration of NFTs into existing IP frameworks is not without its challenges. Jurisdictional issues, rights verification, consent for tokenization, and regulatory compliance in smart contracts and judiciary system *"integration and*

education" about those new technologies, are some of the legal complexities that must be addressed. These obstacles underscore the need for the development of a comprehensive and internationally recognized legal framework tailored to the unique properties and potentials of NFTs. As we move forward, the careful consideration and effective resolution of these challenges will be critical to fully leverage the potential of NFTs in safeguarding IP rights. Moreover, the collaboration of all stakeholders — lawmakers, technologists, artists, and the wider public — will be crucial in shaping an equitable, resilient, and dynamic digital IP landscape for the future. Ultimately, NFTs and blockchain technology are not just disruptors; they are pivotal elements in the digital reformation of our world, redefining the way we perceive, create, and protect value. Web3 is decentralizing access to information and to economy, why not decentralize parts of our traditional legal system?

Conflict of Interest

Authors have no conflict of interest to declare.

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