



THE FUTURE OF THE VIRTUAL WORLD: DEMYSTIFYING THE RELATIONSHIP BETWEEN NFTS AND INTELLECTUAL PROPERTY IN THE METAVERSE

Arya Gupta¹ & Siddhant Sukhlecha²

*"The metaverse is a vision that is going to span decades, if not centuries. It's going to be a long journey,
but it's going to be worth it."*

~Mark Zuckerberg

Abstract

The idea that the metaverse may be responsible for bringing about the "Next Internet" or "Web 3.0" is generating a significant amount of enthusiasm among those who use the internet. Having said that, it is vital to analyze the fundamental factors that are causing this increased excitement. This is especially true for those who are interested in using this cutting-edge piece of technological equipment. A number of well-known internet-based companies, such as Meta popularly known as Facebook, have made considerable investments in the Metaverse, which is a developing digital environment. These organizations are devoting their efforts and resources to the research, development, and improvement of "virtual reality" technology. As a direct consequence of the continuing epidemic that is taking place at this crucial time period, metaverses have begun to materialize. Individuals are now in a position to do a broad variety of duties from the comfort of their own homes as a direct consequence of the quick development that has been made in technology as well as the rising tendency towards autonomy that can be seen in current work settings. This idea would have been laughed off a few years ago, but now it is generally regarded as the path that future advances are likely to follow. Nevertheless, we are of the opinion that the metaverse is still in its formative phases and that major shifts are likely to take place in the not-too-distant future. In this paper, we further discuss about how the Intellectual Property Rights would be governed in metaverse, the kinds

¹ 3rd Year student, Chanakya National Law University, Patna

² 3rd Year student, Chanakya National Law University, Patna

of present and future opportunities available for Non-Fungible Token. This paper also throws light upon the relationship between Trademark Infringement and Non-Fungible Tokens, considering the NFT Ownership and Copyright of the Underlying Asset. In spite of the fact that many of the technological advancements that were discussed in our research are already in the works, it is imperative that a thorough analysis of the legal ramifications associated with the full deployment of the metaverse be carried out before this step can be taken.

Keywords: Metaverse, Assets, Virtual reality, NFT transactions, Intellectual Property Rights

Intellectual Property Rights in Metaverse

The components of intellectual property include patents, trade secrets, trademarks, and copyrights (IP). Copyrighted fictional and nonfictional works, as well as trademarks for all businesses, catchphrases, and patented objects, may all be protected in the metaverse. It is crucial to preserve your intellectual property in the metaverse since it has the potential to earn you a great deal of money. You may take legal action against anybody who steals or otherwise exploits your private information. Another alternative is to sell licenses to others so that they may profit from your intellectual property. Owners of significant intellectual property (IP) may earn a great deal of money via royalties and licensing agreements while retaining their competitive advantage. Due to the complexity of the Metaverse, there will be a great deal of intellectual property theft. Due to the complexity of the transactions, it would be a Herculean undertaking to identify those who violated the law³. Therefore, in order to resolve this issue, we must devise novel and cutting-edge strategies to halt the infringement. For instance, when copy-protected NFT artwork is for sale, both authentic and counterfeit copies may be offered. The selling and purchase of virtual products raises additional concerns about trademark infringement. When constructing physical or digital machinery, patents may be violated. It is also possible to steal trade secrets created or shared using virtual platforms. Consequently, trade secrets are the most valuable item in the Metaverse. Registering your brand in advance for all digital goods and services reduces the likelihood that someone will steal your name. If embedded systems continuously monitor for copyright breaches, it may be simpler to locate them online. Virtual investigators, such as people, AI, and automated systems, might be used to detect and remedy any copyright, trademark, or patent infringements.

³ Efendioğlu, İ.H., ‘The Rise of the Non-Fungible Token (NFT) Market in Turkey: The Effect of Social Media Interaction and the Need for Uniqueness on NFT Purchase Intention*’, 21 Review of Marketing Science 1 (2023).

Encoding information via Non-Fungible Token

Non-Fungible Tokens are digital assets like as images, music, and films whose ownership can be verified and maintained via a blockchain (NFTs). It may be purchased and sold on several internet marketplaces, where it can also be acquired. Non-fungible tokens are a powerful form of token because they can be used in a variety of ways to represent non-fungible assets on a blockchain. The code of non-fungible tokens contains information on what makes each token distinct. Individual pixels in a digital artwork may be encoded with information, much as tokenized in-game things can be encoded with information that tells the game client which object the player possesses and what its characteristics are⁴. As soon as an NFT is created, its whole transaction history is visible on the blockchain. This implies that each token's legitimacy may be verified independently of its issuer. This is significant for those who already own tokens as well as those who may purchase them in the future. Non-fungible tokens may only be sold if their scarcity value is high. In scientific terminology, this indicates that there are insufficient quantities of something. As a result, asset valuations will remain unchanged and the market will not have to cope with an excessive amount of assets. The majority of NFTs are not divisible, meaning you cannot purchase and sell single units. A non-fungible token cannot be used to purchase something of lesser value, such as a concert ticket or trading card.

As with all other digital assets and tokens based on smart contract blockchains, NFTs are entirely programmable. Both Crypto Kitties and Axie Infinity have built-in mechanisms for their respective currencies to reproduce⁵. It is conceivable that more options may be presented in the future. Therefore, NFTs combine the greatest features of decentralized blockchain technology with the best features of non-tradable assets. In contrast to the majority of digital assets, which are issued and managed by centralized organizations and may be revoked at any moment, you can really own and manage your own NFTs.

The Past, Present and Future opportunities for Non-Fungible Token

In 2017, a tweet discussed the need of "tokenizing assets." This was the first usage of the word NFT. Despite the fact that the foundation was built in 2014, NFT trading did not begin until 2016. In 2021, Merriam-Webster, a division of Britannica, will auction off an NFT with its updated definition of NFT to generate funds for charity⁶. This will increase the digital asset's popularity and acceptance in society. Even while NFT often refers to anything that can only be seen or heard in digital format, the term is becoming more

⁴ Ludlow, P. and Wallace, M., *The Second Life Herald : The Virtual Tabloid That Witnessed the Dawn of the Metaverse* (The MIT Press 2007).

⁵ Guidi, B. and Michienzi, A., 'From NFT 1.0 to NFT 2.0: A Review of the Evolution of Non-Fungible Tokens', 15 *Future Internet* 189 (2023).

⁶ Birinci, Y., 'The Role of Effective Protection of IP Rights on Economic Growth', in *Innovation Policies and International Trade Rules: The Textiles and Clothing Industry in Developing Countries* (Palgrave Macmillan 2009) 51.

prevalent. In March 2021, Christie's sold a 5,000-image digital collage by Mike Winkelmann, also known as Beeple, for \$69,346,250. Over 22 million individuals saw the online auction. Later, a former Christie's auctioneer told the BBC that he had difficulty grasping the concept of an NFT because "the thought of purchasing something that doesn't exist is plain strange." NFTs may increase or decrease in value for the same reasons as cryptocurrencies and collectibles do⁷. Beeple even questioned if he had been struck by a bubble. NFTs are projected to gain in popularity as their application in online transactions increases. For example, this technology has already been utilized to transfer certain real estate deeds, and in the future, a car title may also be an NFT⁸. People have argued that the cryptocurrency sector as a whole and NFTs in particular have a major influence on the environment. In May of 2022, it was anticipated that a single Ethereum transaction will consume more than 250 kilowatt-hours of energy, which is roughly nine days' worth of electricity for the typical U.S. family.

To operate the blockchain and produce NFTs, a lot of computing power is required. It's likely that each transaction with a different cryptocurrency demands a different quantity of energy. Cryptocurrency platforms consume a lot less energy currently since they leverage distributed computing and renewable resources. People have also claimed that NFTs are a high-risk technique to speculate on assets whose future prices are hard to anticipate. There will be a steep learning curve when the market finds out the true worth of the millions of NFTs that are currently for sale on various blockchains and marketplaces. The market for NFTs is only beginning to expand. We may not know which NFTs will endure for years.

The Invincible Strings Attached: NFTs and its Relationship with IP Rights

It's not always apparent who owns the IP created by an NFT. In a March blog post, James Grimmelman, Yan Ji, and Tyler Kell from Cornell University wrote about how challenging it is to adapt NFTs into the present framework of copyright law. Even while the writers recognized that a person who owns an NFT might have a lot of influence over a creative work, they underlined that this sort of power is not a natural aspect of owning such an asset. The inventor must take action in order to defend the legal rights of the NFT owner.

According to the statistics very few of them take all of the fundamental procedures required to make sure that NFT copyrights perform the way community members want them to. Many NFT projects were looked at. In their paper "Demystifying NFTs and Intellectual Property: What You Need to Know," Elizabeth Ferrill, Soniya Shah, and Michael Young state that NFTs "may be susceptible to IP protections, such as

⁷ Philpott, J., 'A Handbook of Intellectual Property Management: Protecting, Developing and Exploiting your IP Assets: Hard Rights versus Soft Rights', in A handbook of intellectual property management: Protecting, developing and exploiting your IP assets (2004) 15.

⁸ Ruse-Khan, H.G., 'Re-delineation of the Role of Stakeholders: IP Enforcement beyond Exclusive Rights', in Intellectual Property Enforcement: International Perspectives (Elgar 2009) 43.

copyright, design patent, and trademark rights." They argue that when an NFT is manufactured or sold, its ownership and compliance with any regulations that apply to it, like as the conditions of purchase or resale, are handled automatically by a smart contract on a blockchain⁹. This typically implies that the sale of the NFT comes with a license that specifies out the buyer's rights and duties for the NFT. In their study, Ferrill, Shah, and Young contend that the great majority of NFT producers restrict the NFT's economic potential and provide users a license that only enables them "use, copy, and display" the NFT. As evidence, they refer to the fact that Twitter co-founder Jack Dorsey sold his first tweet to a user called Sina Estavi in return for a token that couldn't be used for anything else (NFT)¹⁰. Even if Dorsey owns the copyright, Estavi is the only one who may use the token that symbolizes the tweet. Estavi can't sell T-shirts with the tweet on them because Dorsey hasn't granted him permission to do so.

Lawyer Jeremy Goldman, who specializes in intellectual property and blockchain technology at Frankfurt Kurnit Klein & Selz, said that copyright is always an "opt-in" system. This implies that NFT artists may choose whether or not to restrict what consumers of their work can do. Tokens may or may not state what sort of license they are, but as an NFT holder, you should know about a number of kinds.

NFT Ownership and Copyright of the Underlying Asset

When an individual purchase an NFT, all they receive is a cryptographically signed receipt that verifies they are the legitimate owner of that specific NFT. There are two typical misconceptions that need to be addressed up¹¹. First, the buyer does not obtain the author's original copyright. Second, the buyer does not obtain property rights to every copy of the work that was purchased. One individual, for example, spent hundreds of dollars for the privilege to utilize the Nyan Cat NFT in their own digital cartoon that was developed using animation software. Christopher Torres, who created Nyan Cat, still holds the rights to the initial drawing he did of the cat. Because of the following important points: Each NFT contains a unique serial number or "fingerprint" (hash) that makes it hard to spoof. Since a hash is a cryptographic key produced from a single digital file, it can only ever represent a single copy of that file. But it implies that NFT may not always be a good thing. But this is when agreements and licenses that are signed digitally come in useful.

But when it comes to copyright, the rights won't alter unless the original author gets permission to do so. When copyright is transferred by licensing, the person who acquires it may not be able to produce additional

⁹ Townley, B., Roscoe, P. and Searle, N., *Creating Economy: Enterprise, Intellectual Property, and the Valuation of Goods* (Oxford 2019).

¹⁰ Horky, F. et al., 'Don't miss out on NFTs?! A sentiment-based analysis of the early NFT market', 88 *International Review of Economics & Finance* 799 (2023).

¹¹ Sengupta, A., 'Protecting the rights of an IP buyer using cryptosystem-based multivariable fingerprinting', in *Frontiers in Securing IP Cores: Forensic detective control and obfuscation techniques* (IET 2019).

copies, distribute copies, perform, display, or develop new works based on the original asset¹². The Indian Copyright Act of 1957 stipulates that those who possess copy rights have a range of rights, including the ability to produce copies and amend them. When a buyer buys an NFT related to a creative work, they also receive a digital copy of the piece (in formats like.jpeg,.pdf, and.mp4). If an individual copy and spread an NFT without the owner's consent, they can be breaching their copyright. This includes duplicating or modifying an NFT without authority¹³. Since ownership of NFTs isn't centralized and blockchain transactions can't be undone, it could be impossible to enforce intellectual property rights against a buyer following an NFT sale. A digital wallet address is commonly connected to an NFT, exactly as a bank account is. However, without excellent digital forensics, it may be impossible to determine out who truly owns the wallet. Using powerful takedown letters might block the NFT from ever being offered to the public.

Relationship between Trademark Infringement and Non-Fungible Tokens

The major reason an entrepreneur comes up with an NFT for an underlying asset is to differentiate oneself apart from competition. But trademark infringement arises when an unauthorized third party mints, sells, or resells an NFT using the registered trademarks of the asset owner without the asset owner's consent¹⁴. The topic of whether or not a corporation genuinely owns NFTs as opposed to trademarks or the assets being sold is becoming increasingly significant as owners of prominent fashion brands like Tiffany, Louis Vuitton, and Dom Perignon utilize the AURA blockchain to allow buyers examine the legitimacy of their branded NFTs. This issue might be remedied in a large manner if market actors broadened their trademark registrations to include non-fungible tokens (NFTs) in their trademark transfers and classifications. They can also wish to identify their brand with a specific style or kind of work clothing. Design patents need to be considered about when they are required because of how much money, profit, and sales they may bring in.

The owner of an NFT blockchain might utilize patents to license the technology underlying their NFT, enabling its consumers to receive actual collectibles. For example, the world-famous shoemaker Nike has trademarked the notion of "cryptographic digital assets for footwear," which helps purchasers authenticate the validity of their purchases and preserve a digital collectable version of their shoes on a mobile device or digital wallet (Crypto kicks)¹⁵. It's vital to remember that a patentable concept must be novel and fulfil

¹² Marcelino, J.G., Kusumawardani, N. and Al Hafiedz, A., 'NFT (Non-Fungible Token) Sebagai Jaminan Kebendaan. (Indonesian)', 6 Notaire 19 (2023).

¹³ Hasan, H.R. et al., 'Using NFTs for ownership management of digital twins and for proof of delivery of their physical assets', 146 Future Generation Computer Systems 1 (2023).

¹⁴ Kuner, S. and Brennan, D., 'Cryptoassets in the Metaverse: the Risks, Opportunities, and Legal Considerations', 43 Licensing Journal 4 (2023).

¹⁵ Chowdhury, M.A.F. et al., 'NFTs, DeFi, and other assets efficiency and volatility dynamics: An asymmetric multifractality analysis', 87 International Review of Financial Analysis N.PAG (2023).

the standards for a patent.

The Laws and Lacunae on Non- Fungible Tokens and Intellectual Property

Even while NFT transactions have the ability to totally transform the art market by making transactions safer and simpler, there are still doubts regarding whether or not the seller is genuine. People frequently have this issue, as when they "tokenize" a piece of art that isn't theirs and attempt to sell it as if they were the original owner. Under Section 55 or Section 63 of the copyright laws, the owner of the copyright might seek civil or criminal action against the individual who stole their work¹⁶. We shall utilize the copyright infringement guidelines in Section 51 of the Copyright Act to assess whether there has been an infringement and if it comes under Section 52 of the Copyright Act. According to Section 79 of the Information Technology Act of 2000 and the Intermediaries Guidelines/Rules, NFT markets and platforms shall also be held responsible. Together, these requirements demand that intermediary platforms undertake their research and act fast if there is any hint that their service is being exploited to support criminal activities. If they don't, they face the danger of being sued as a facilitator¹⁷. There are still difficulties, that's for sure. Even though NFTs are extensively utilized and quite popular, trading in them is not restricted in India. Since NFTs can only be acquired with cryptocurrencies, the lack of clarification regarding the legal status of cryptocurrency in India is likely the main obstacle with NFT trading. With the adoption of the Banning of Cryptocurrency and Regulation of Official Digital Currency Bill in 2019, support for making all cryptocurrencies and NFTs illegal has strengthened. Any usage of digital money, whether directly or indirectly, would be unlawful and might lead to up to 10 years in jail.

In 2018, the Reserve Bank of India (RBI) also sought to ban individuals from utilizing virtual money. However, their actions were less contentious than the legislation that was being debated over. The Internet and Mobile Association of India, together with a few enterprises that manage online platforms for trading crypto-assets and other entities, have filed an appeal against the aforementioned ruling¹⁸. The Apex Court held that the notice was unreasonable because of how it was employed compared to other comparable measures in India and throughout the globe. The three-judge panel stated that the RBI couldn't restrict individuals from trading bitcoin since there was no legislation that specified people couldn't acquire or sell cryptocurrency. The court concluded that making it impossible for individuals to undertake legal business would go against their fundamental rights. Even while regulatory issues imply that new investors and purchasers of NFTs face an unknown risk, the Indian Copyright Act of 1957 makes it easy to enforce IP

¹⁶ CERES, R.W. and KETTLE, K.C., 'Digitized Design: Navigating IP Rights in the Age of the Metaverse', 69 Federal Lawyer 34 (2022).

¹⁷ Mittendorf, B. and Smith, S.S., 'Riding the NFT Wave', 93 CPA Journal 18 (2023).

¹⁸ Vig, S., 'Intellectual property rights and the metaverse: An Indian perspective', 25 Journal of World Intellectual Property 753 (2022).

rights.

The Pulp Fiction of Ownership of NFT

In the famous case of *Miramax, LLC v. Tarantino*¹⁹, A few months after RAF sued Dash, Quentin Tarantino and Miramax LLC engaged into a similar NFT issue on the West Coast. Miramax sued Quentin Tarantino in a California district court in November 2021, stating that Tarantino's intentions to sell seven of his movies went against the company's intellectual property rights. "Secret NFTS" threatened to breach an agreement in which Tarantino had committed to provide Miramax all rights to the exclusive moments" from the 1994 movie *Pulp Fiction* (including all copyrights and trademarks in and to the Film). The auction was announced on the Open Sea NFT platform. It claimed secret and original information that has never been seen or heard before, such as the unedited initial handwritten draughts of "Pulp Fiction" and exclusive bespoke commentary from Tarantino, exposing mysteries about the movie and its creator. In response to Miramax's concerns, Tarantino argued that the planned Secret NFTs are part of the rights that his contract with the firm allows him, such as the freedom to publish scripts. Miramax may or may not win its case against Tarantino based on the facts, but one thing is for sure that the two parties have differing notions about how far Miramax's rights go. Miramax does control a lot of *Pulp Fiction* rights, but they don't allow them do everything they want. Tarantino has reserved the usage of several film-related assets, which may or may not include the applicable Secret NFTs. This case highlights how vital it is for legal agreements that include intellectual property to state the limitations of the rights being transferred as explicitly as possible. Given how enthused people are about NFTs and how fast their popularity has increased among content owners searching for new methods to generate money, this is of the highest significance.

Conclusion

One of the primary challenges is the fact that the vast majority of people don't have any idea what legal protections apply to them after purchasing an NFT. Although that is not the case, several customers have the misconception that they are also acquiring the actual job²⁰. In point of fact, however, customers are not acquiring the item itself; rather, they are purchasing information around the item. The creator of the work is the only person who has the right to make copies, publish the work, lend or lease it, perform it, edit it, share it, or provide permission to others to do any of these things. A link in an NFT may only be in violation of the right to communicate to the public if there is a causal relationship between the token and the work. A non-fungible token (NFT) does not infringe on these rights since it consists only of code and does not

¹⁹ 2:21-cv-08979-FMO-JC (C.D. Cal. Mar. 10, 2022)

²⁰ Sadorsky, P. and Henriques, I., 'Using US Stock Sectors to Diversify, Hedge, and Provide Safe Havens for NFT Coins', 11 Risks 119 (2023).

reproduce the work in any way that matters²¹. Therefore, digital money in the form of non-fungible tokens (NFTs) will be tied to every copy of the work that is made, coined, and uploaded on blockchains so that it may be sold or transferred. This will allow for the work to be sold or transferred. The Indian Copyright Act of 1957 is very important for the manufacturing, propagating, and transferring of copies of NFTs that have been developed for digital recognition. This is despite the fact that there are no specific limits for NFTs.

²¹ Nobanee, H. and Ellili, N.O.D., 'Non-fungible tokens (NFTs): A bibliometric and systematic review, current streams, developments, and directions for future research', 84 International Review of Economics & Finance 460 (2023).