REGULATION OF INTELLECTUAL PROPERTY RIGHTS IN THE METAVERSE

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ABSTRACT

The quick growth of the Metaverse and Non-Fungible Tokens have created big hurdles for worldwide Intellectual Property Law. This article looks at how the world deals with IP violations in these virtual worlds. In the US, the Lanham Act, the Digital Millennium Copyright Act (DMCA), 1998 and Section 230 of the Communications Decency Act, 1996 guard trademarks and copyrights but need updates to keep up with new tech. The European Union (EU) depends on the EU Trade Mark Regulation EUTMR and the Directive on Copyright in the Digital Single Market (DSM Directive) to protect trademarks and copyrighted works. The Community Design Regulation makes sure digital designs stay unique. In India, the Information Technology Act 2000, the Trade Marks Act 1999, and Copyright Act 1957 don't quite cut it for the Metaverse. They're missing key definitions and ways to enforce the rules, which shows they need an update. This research points out that we need crafted IP laws. These laws should keep up with new tech and encourage countries to work together. This way, they can protect rights in the metaverse and when it comes to NFTs. The article also deals with international protocols and recommendations of how they need to change to incorporate relevant laws that fix today's problems.

A. INTRODUCTION

The ownership of ideas, innovations and creative outputs are largely facilitated by Intellectual Property (IP) rights. These rights provide writers and creators with exceptional privileges to enjoy their inventive or artistic works. IP protection includes trademarks, copyrights and patents, among others. Uniqueness, non-obviousness and economic utility are the three criteria used to check if a certain invention can be patented.[1] Transformative innovations have punctuated the evolution of digital landscapes, with none more profound than the rise of Non-Fungible Tokens (NFTs). Converging with the Metaverse, a vast and immersive virtual domain, these cryptographic tokens have redefined ideas of ownership in cyberspace. As such NFTs are unique identifiers of digital assets that cannot be duplicated and are heavily linked to decentralized blockchain architecture for which Ethereum is the frontrunner. Amidst this ever-changing environment, the intersection between NFTs and trademarks provides an interesting area to survey as there are many legal complexities and potential battlefields.

The Metaverse is made up of three-dimensional virtual spaces and avatars representing users where NFTs are exchanged, and digital ownership is confirmed.[2] The Metaverse began with seminal works like Morton Heilig's Sensorama Device which was conceptualized in 1956 as an early effort to deliver immersive sensory experiences to users within virtual environments.[3] Nowadays, the Metaverse is a complex digital ecosystem where people can engage with each other, cooperate and transact in virtual settings using such cutting-edge technologies like Virtual Reality (VR), Augmented Reality (AR), and Blockchain.

It all began in the early 2010s, when Bitcoin gained some momentum and introduced us to blockchain—an independent ledger that gave us secure, decentralized, and trustless digital transactions that didn't require any middleman like banks.[4] Then came the year 2015—Ethereum introduced smart contracts, and this laid the groundwork for NFTs that allowed developers to create one-of-a-kind digital items and genuinely establish secure ownership on

[1] What are the criteria for patenting my invention?, *available at*: https://www.government.nl/topics/intellectual-property/question-and-answer/what-are-the-criteria-for-patenting-my-invention (last visited on May 4, 2024)
[2] Oleg Fonarov, "What is the Role of NFTs in the Metaverse", *Forbes,* 11th March 2022, *available at:* https://www.forbes.com/sites/forbestechcouncil/2022/03/11/what-is-the-role-of-nfts-in-the-metaverse/?sh=7bf0ac606bb8 (last visited on May 4, 2024)
[3] Bernard Marr, "A Short History of the Metaverse", *Forbes,* 21st March 2022, *available at:* https://www.forbes.com/sites/bernardmarr/2022/03/21/a-short-history-of-the-metaverse/?sh=7af1a9935968 (last visited on May 14, 2023)
[4] Usman W. Chohan, "A History of Bitcoin" SSRN (2017) *available at* : https://ssrn.com/abstract=3047875 (last visited on May 1, 2024)

the blockchain. What draws out NFTs from the crowd is their non-fungibility. Unlike regular cryptocurrencies, NFTs are unique and can never be exactly duplicated; for this reason, they are highly suitable for representing unique assets like digital art, collectibles, or virtual real estate. The usage of NFTs in their early days found its way into the development of games and collectibles. For example, CryptoKitties, launched in 2017, was a game allowing users to purchase, sell, and even breed virtual cats represented as NFTs. On this idea, therefore, digital ownership and scarcity quickly gained appeal to artists, musicians, and creators who wanted to see the potential that NFTs held.[5]

The turning point for NFTs was the March 2021 sale of digital artist Beeple's "Everydays: The First 5000 Days," which raised $69 million at auction.[6] NFTs are titles to digital assets, not the assets themselves. This distinction avoids infringing on the actual IP rights. For example, if someone creates some form of painting virtually and sells it as an NFT, once a buyer comes to own it within the Metaverse, then it will be exclusively his own, yet the creators will continue to retain the IP rights over their work. The approach makes sure that in this fast-changing world of digital ownership within the Metaverse, the creators' rights are respected.

B. Evaluating Legal Frameworks and Proposals

When the international protocols such as the Paris Convention, the Berne Convention, the Madrid System, the Patent Cooperation Treaty (PCT), the Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement, and the Hague Agreement were made, they were made with the thought of keeping the IP Rights of the conventional physical space in check. They have lacunae when applied in the Metaverse and prove to be insufficient. Indeed, principles from the Paris and Berne Conventions require adaptations to cover such matters as virtual goods and digital art. Though the Madrid System and PCT provide for centralized trademark and patent protection respectively, the very borderless nature of the metaverse has implications which need to be readdressed. National level actions of the U.S., U.K., E.U., and Indian legislation also play significant role.

[5] CryptoKitties: A Pioneer in Ethereum Gaming and NFTs, available at https://www.gemini.com/cryptopedia/cryptokitties-nft-crypto-ethereum-token (last visited May 1, 2024)
[6] The NFT of Beeple's "Everydays - The First 5000 Days" Sells for $69.3 Million at Christie's Online, available at: https://www.historyofinformation.com/detail.php?id=5444 (last visited: May 1, 2024)

I. Analysis of International Legal Frameworks

A. International Protocols

1. The Paris Convention for the Protection of Industrial Property

The Paris Convention for the Protection of Industrial Property is one of the very first and, perhaps, most influential international agreements in the sphere of IP. Signed on 20 March 1883, it marked the unification and simplification of the procedure for obtaining and enforcing IP rights in several countries.[7] Such an agreement was necessary because of the cumbersome and non-homogeneous legal and bureaucratic obstacles that stood in the way of any inventor, industrialist, or creator who wished to get international protection for his IP. The first text of the Convention was elaborated at an international conference held in Paris, attended by representatives of 11 countries. Since its adoption, the Paris Convention has undergone several revisions considering the emerging challenges and developments in the field of IP law.

One corner of the Paris Convention is founded on the tenet of "national treatment."[8] This principle requires that every member country should extend IP protection to nationals of any other member country at par with its own nationals, and thus the approach of IP protection becomes non-discriminatory in nature. Another central provision is the "right of priority," whereby an applicant, in one member country, can use the filing date of an initial patent, trademark, or industrial design application as the effective filing date in other member countries, conditioned on the proviso that such subsequent applications are similarly filed within a certain time: 12 months for patents and utility models, and 6 months for trademarks and industrial designs.[9] It further sets a set of general rules to be observed by the countries to protect titles of industrial property, running from patents to trademarks, industrial designs, utility models, service marks, trade names, and geographical indications, and the repression of unfair competition. It is considered that the patents filed in various member countries are independent of one another. This means that the granting of a patent in one country or its refusal

[7] Paris Convention for the Protection of Industrial Property, WIPO, *available at:* https://www.wipo.int/treaties/en/ip/paris/#:~:text=The%20Paris%20Convention%2C%20adopted%20in,the%20repression%20of%20unfair%20competition. (last visited on: April 23, 2024)
[8] Paris Convention for the Protection of Industrial Property, 1883
[9] Paul Goldstein and P. Bernt Hugenholtz, IV, International Copyright (Oxford University Press, 27th November 2019)

or termination does not affect its validity in another country which is a signatory to the Convention.

The Paris Convention thus provided for international cooperation in protecting IP rights, making the process easier for an inventor or any business concern to obtain IP rights in a number of countries and stimulating innovation and international trade. The Convention was initially managed by the Bureau for the Protection of Industrial Property. After the International Bureau of World Intellectual Property Rights (WIPO) was established in 1967, administration of the Convention transferred to WIPO, which now oversees the implementation of the Paris Convention and other international IP treaties.[10] The principles set by the Paris Convention have formed the foundation on which many other international IP treaties and agreements were based, such as the TRIPS Agreement administered by the WTO. Although more than a hundred years old, the Paris Convention is still relevant today and applied together with other newer treaties and agreements whose principles concerning national treatment, right of priority, and common rules were of great importance for the development course of global IP law.[11]

This principle of "right of priority" can be stretched to goods and services existing within the Metaverse. For example, if a company in Japan files a certain patent for some new technology in VR, it would have the ability to claim priority in countries that are members of it and be sure that its invention is protected around the world within the Metaverse. In such a case, this would help creators protect their IP rights from others who may try to infringe on their invention by using it in the virtual world. The rules under this treaty may be adapted to apply within the Metaverse to maintain a uniform way of protecting IPs. For example, it could be expressly provided that the definition of a trademark applies to virtual goods and services, things such as digital fashion, virtual real estate, and all other kinds of products born in the Metaverse. Similarly, such patents may be granted for innovations in VR/AR technologies, making sure that their creators or inventors are well protected for their digital inventions.

Under the Paris Convention, the patents granted within the various member countries are independent of one another. As such, grant of a patent in one country does not affect its validity in another member country upon denial, rejection, or lapse. This will be a cardinal issue for the Metaverse, whereby digital products and innovations are free to flow across the globe, crossing

[10] *Ibid.*
[11] *Ibid.*

virtual borders. If a firm receives a patent for some virtual invention in one country that is a member of an international treaty on patents, such a patent should retain its validity and enforceability in the Metaverse, regardless of its status in other countries.

2. Berne Convention for the Protection of Literary and Artistic Works[12]

The Berne Convention was created in 1886 as a principal international agreement protecting creators' rights over their literature and artistic works. Its principles are greatly adaptive to the Metaverse. The main provisions of the Berne Convention cover the principle of automatic protection of works, as duly protected without any formality or registration, which grants authors the same rights in other member countries as those accorded in their own, followed by the principle of national treatment and minimum standards of protection that establish threshold security for a number of rights. Furthermore, the Convention confers on authors the exclusive rights to authorize the use of their works and grants moral rights with provisions for authors' claim to authorship and their objections against derogatory treatments of their works. All these provisions together build a very stringent framework for protection of intellectual property rights in a metaverse.

This is how the provisions of the Berne Convention can extend to the protection of IP rights in the Metaverse, as extrapolated in table below[13]:

Provision	Berne Convention Principle	Application in the Metaverse	Relevant Articles
Automatic Protection	Works are protected without the need for formal registration.	Digital art, virtual performances, and other creative works are automatically protected once created and	Article 5(2)

[12] Berne Convention for the Protection of Literary and Artistic Works, WIPO, *available at:* https://www.wipo.int/treaties/en/ip/berne/summary_berne.html (last visited on April, 24 2024)
[13] *Ibid.*

		published in virtual environments.	
National Treatment	Authors enjoy the same rights in other member countries as those granted to domestic authors.	Virtual works created in one country should receive the same protection in the metaverse across all member countries, ensuring global respect for creators' rights.	Article 5(1)
Provision	**Berne Convention Principle**	**Application in the Metaverse**	**Relevant Articles**
Minimum Protection Standards	The Convention sets minimum standards for the protection of various rights, including reproduction, performance and translation rights.	Ensures virtual works, such as digital art, music, and performances, are protected against unauthorized reproduction, distribution and adaptation.	Articles 6-19
Exclusive Rights	Authors have exclusive rights to authorize the use of their works, including reproduction, public performance,	Creators can control how their works are used in virtual environments, granting licenses for specific uses like virtual art exhibitions, digital	Articles 8-12

	broadcasting, and adaptation.	concerts, and in-game content.	
Moral Rights	Authors have the right to claim authorship and to object to derogatory treatment of their works.	Protects creators against modifications or uses of their works in the virtual world that could harm their reputation. Authors can object to alterations that distort the original meaning or intent of their digital artworks.	Article 6*bis*

3. The Madrid Protocols

The Madrid System is formed by the 1891 Madrid Agreement Concerning the International Registration of Marks and the Madrid Protocol adopted in 1989. It offers a single procedure for registering and managing marks in large numbers of countries.[14] The Madrid Agreement was the first international treaty to facilitate the international registration of trademarks, providing that trademark owners may apply for protection in several countries through a single application filed with their home office.[15] The Protocol was introduced with a view to making good some of the limitations of the Agreement and creating a more flexible and accessible system for more countries, particularly those with specific trademark registration procedures. Administered by WIPO, the Madrid System enables trademark owners to seek registration in multiple countries by filing a single international application. This, upon registration, represents protection in all the countries that are members of the association, thus making the process much easier and more cost-effective for trademark owners.[16] To extrapolate how the

[14] Madrid System – The International Trademark System, WIPO, *available at:* https://www.wipo.int/web/madrid-system (last visited on: April 25, 2024)
[15] Madrid Protocol, *available at*: https://en.wikipedia.org/wiki/Madrid_Protocol (last visited on: April 25, 2024)
[16] James Boyle and Jennifer Jenkins, Intellectual Property: Law and the Information Society: Cases and Materials, 5th Edition 2021 (Published by: Center for Study of the Public Domain)

provisions of the two conventions can apply to the protection of IP rights in the Metaverse, refer to the table below:[17]

Provision	Madrid Agreement and Protocol Principle	Application in the Metaverse	Relevant Articles
Centralized Application Process	Allows for a single international application to be filed, designating multiple member countries for trademark protection.	Businesses and creators can use the centralized application process to register their trademarks for virtual goods and services across multiple jurisdictions, reducing administrative burden and costs.	Madrid Protocol Article 2
Extension of Trademark Protection	International registration extends trademark protection to all designated member countries.	Ensures that trademarks for virtual goods and services are protected in all relevant markets within the metaverse, preventing	Madrid Agreement Article 4, Madrid Protocol Article 4

[17] *Ibid.*

		unauthorized use or infringement.	
Flexibility and Adaptability	Provides greater flexibility, allowing countries with different trademark registration systems to participate.	Facilitates consistent trademark protection across diverse virtual environments within the metaverse.	Madrid Protocol Article 9*sexies*
Simplified Management	Allows for the management of international registrations, including renewals and changes, through a single procedural step.	Simplifies the administration of trademarks for virtual goods and services, ensuring efficient and responsive IP management in the metaverse.	Madrid Agreement Article 7, Madrid Protocol Article 7
Uniform Protection Standards	Establishes uniform standards for trademark protection across member countries.	Creates consistent trademark protection in the metaverse, maintaining brand integrity and preventing confusion across digital platforms.	Madrid Agreement Article 5, Madrid Protocol Article 5

4. The Patent Cooperation Treaty

The PCT was established in 1970 and is administered by WIPO.[18] By means of the PCT, there is a single procedure for filing an application for protection of an invention in each contracting state. It thus makes it easier to seek patent protection internationally, with less need for repeated applications in individual countries and lessening, consequently, the related administrative burden. To extrapolate how the provisions of the PCT can apply to the protection of IP rights in the Metaverse, refer to the table below:[19]

Provision	PCT Principle	Application in the Metaverse	Relevant Articles
Centralised Filing Process	Allows for a single international patent application recognized in multiple member countries.	Innovators developing technologies for the metaverse, such as VR/AR devices and blockchain-based systems, can file a single PCT application to seek patent protection globally, reducing administrative burden and costs.	Articles 3-4
International Search Report	Provides an international search report and a written opinion on the	For metaverse technologies, the international search report and written opinion offer insights into patentability, helping inventors make informed decisions about	

[18] PCT – The International Patent System, available at https://www.wipo.int/pct/en/ (last visited on 26th April, 2024)
[19] *Ibid.*

and Written Opinion	patentability of the invention.	pursuing protection in specific markets.	Articles 15-16
Delayed National Phase Entry	Allows applicants up to 30 months from the priority date to enter the national phase in each designated country.	Gives innovators in the metaverse more time to refine their inventions, seek funding, and develop commercialization strategies before incurring costs associated with national phase entry.	Article 22, Article 39
Harmonization of Procedures	Harmonizes the formal requirements for patent applications across contracting states.	Facilitates the filing of patent applications for metaverse technologies, ensuring consistent requirements across jurisdictions, reducing complexity, and encouraging innovation.	Articles 27-28

5. TRIPS Agreement

The TRIPS Agreement is a comprehensive international legal agreement between all the member nations of the WTO. It was negotiated during the Uruguay Round of the General Agreement on Tariffs and Trade in 1994 and came into effect on January 1, 1995.[20] The TRIPS Agreement sets minimum standards for the regulation of various forms of IP as applied to

[20] Introduction to TRIPS Agreement, Japan Patent Office Asia-Pacific Industrial Property Center, JII, *available at*: https://www.jpo.go.jp/e/news/kokusai/developing/training/textbook/document/index/TRIPs_Agreement.pdf (last visited on April 25th, 2024)

nationals of other WTO member nations. To extrapolate how the provisions of the PCT can apply to the protection of IP rights in the Metaverse, refer to the table below:

Provision	TRIPS Agreement Principle	Application in the Metaverse	Relevant Articles
National Treatment and Most-Favored-Nation Treatment	Mandates equal treatment for nationals of member countries and non-discrimination among member countries.	Ensures that creators, innovators, and businesses in the metaverse receive equal protection and benefits in all member countries, fostering a fair and competitive digital environment.	Articles 3, 4
Minimum Standards of IP Protection	Sets out minimum standards for various IP rights, including copyright, trademarks, patents, and more.	Directly applies to virtual goods and services, ensuring that trademarks for virtual products or services and copyrights for digital art, music, and literature are protected.	Articles 9-40

Enforcement of IP Rights	Requires member countries to provide effective procedures for enforcing IP rights.	Ensures that rights holders can take legal action against IP infringements in the metaverse, including unauthorized use, reproduction, or distribution of digital content.	Articles 41-61
Dispute Settlement	Incorporates WTO dispute settlement procedures for IP disputes.	Provides a structured and internationally recognized mechanism for resolving IP disputes arising in the metaverse, maintaining stability and predictability.	Article 64

6. The Hague Agreement Concerning the International Registration of Industrial Designs

The Hague Agreement Concerning the International Registration of Industrial Designs, or the Hague System, is an international treaty that simplifies the process of obtaining industrial design protection in as many countries as possible. The protection of a design in multiple countries may be achieved through the filing of one application with WIPO. The Hague Agreement was first accepted in 1925 and had then been revised several times to increase its

efficiency and scope of effect.[21] Notable revisions include the 1934 Act, which is called the London Act; the 1960 Act, which is called the Hague Act; and the 1999 Act, entitled the Geneva Act—the latter being most used nowadays. It aims to make the process of international registration of industrial designs as simple as possible, avoiding the trouble of filing multiple applications in different countries. This system is also meant to simplify administrative formalities. Within the Hague System, a rising number of member countries provide far-reaching international protection for industrial designs. To extrapolate how the provisions of the Hague Agreement can apply to the protection of IP rights in the Metaverse, refer to the table below:[22]

Provision	Hague Agreement Principle	Application in the Metaverse	Relevant Articles
International Application	Allows for a single international application for the registration of industrial designs.	Designers of virtual objects, such as digital fashion, virtual real estate, and in-game items, can use the Hague System to protect their designs in multiple countries with one application.	Article 1
		By designating key markets, designers can ensure their virtual designs are	

[21] The Hague Agreement Concerning the International Registration of Industrial Designs, available at https://www.wipo.int/treaties/en/registration/hague/ (last visited on April 25th, 2024)
[22] *Ibid.*

Designations	Applicants can designate multiple countries where they seek protection.	protected in jurisdictions relevant to their business, enhancing enforcement in the metaverse.	Article 1 and 3
Single Language and Currency	Filing can be done in one language and with a single currency payment.	Simplifies the process for international designers who create digital content for the metaverse, reducing barriers related to language and currency differences.	Article 4
Single Examination	Formal examination by WIPO and substantive examination by designated countries	Ensures digital designs meet legal standards for protection in each designated country, providing robust and enforceable rights across multiple jurisdictions.	Article 8, Article 12

Duration of Protection	Minimum protection period of 5 years, renewable.	Ensures long-term protection for virtual designs, allowing designers to capitalize on their creations over an extended period in the rapidly evolving digital environment.	Article 17

B. National Laws

1. The U.S.A.

i) The Lanham Act[23]

The Lanham Act is the fundamental federal legislation, going as far back as 1946, that layouts the basis for U.S. trademark law. It sets the broad framework through which trademarks are registered, protected, and enforced, most relevant in the metaverse and NFT context.

Section 32 is about acts of unauthorized use of registered trademarks. The provision will take care that trademarks of Virtual Goods and Services in the metaverse are not used without consent, ensuring there is no brand dilution or consumer confusion. For instance, a brand like Nike can use this section to stop sales of virtual sneakers branded with their logo without permission.

Section 45 of the act defines essential expressions for the terms running throughout the Lanham Act, "trademark," and "use in commerce." These definitions will prove very instrumental in

[23] U.S. Trademark Law, available at https://www.uspto.gov/sites/default/files/trademarks/law/Trademark_Statutes.pdf (last visited on April 25th, 2024)

applying trademark protections to virtual goods and services so that digital trademarks are fully protected under the law.

It also identified the grounds for canceling a registered trademark under Section 14, such as becoming generic or being abandoned. This section will ensure that the registrations of trademarks on virtual goods and services remain effective and may be effectively enforced against misuse or abandonment that may undermine IP protection.

Section 43(a) safeguards against false designations of origin, descriptions of goods and services, and misleading representations therein. This section would be very important in the metaverse to prevent some intangible deceptions that could be perpetrated on virtual goods and services, misrepresenting their origin or quality to consumers and causing fraud to legitimate businesses.

Section 43(c) protects famous marks from diluting and tarnishing uses, irrespective of whether consumers are confused. This provision will play an important role in protecting well-known brands in the metaverse so their level of distinctiveness and reputation will not be affected by unauthorized or inappropriate uses.

ii) The Digital Millennium Copyright Act (DMCA)[24]

Enacted in 1998, the DMCA provides a framework for protecting copyrights in the digital environment, playing a crucial role in addressing IP infringements in the metaverse and with NFTs. One of the key provisions of the DMCA is the ability for copyright holders to issue takedown notices to online platforms hosting infringing content. This mechanism is vital for protecting digital works in the metaverse, where unauthorized reproductions and distributions can occur rapidly. The DMCA's safe harbor provisions allow online platforms to claim immunity from liability for user-generated content, provided they promptly remove infringing content upon receiving a takedown notice.[25] This encourages platforms to cooperate with IP rights holders in maintaining a legal digital environment. Content creators in the metaverse can

[24] The Digital Millennium Copyright Act of 1998, available at: https://www.copyright.gov/legislation/dmca.pdf (last visited on April 25th, 2024)

[25] Juan Londoño, Jaci McDole and Daniel Castro, "IP and the Metaverse: The Digital Millennium Copyright Act Will Face Serious Challenges in the Metaverse", Information Technology Innovation Foundation, September 19, 2022 (last visited on April 27, 2024)

leverage the DMCA to protect their digital art, music, videos, and other creations from unauthorized use and distribution.

iii) Section 230 of the Communications Decency Act [26]

Section 230 of the Communications Decency Act provides immunity to online platforms from liability for user-generated content. This has significant implications for the metaverse, where platforms can host a wide range of user-generated content without being directly responsible for IP infringements committed by their users. However, there are ongoing discussions about modifying Section 230 to address specific issues related to IP enforcement in the metaverse. The current protections under Section 230 encourage platforms to foster diverse content while cooperating with IP rights holders to address infringements effectively. The rise of NFTs has introduced unique challenges for IP law, necessitating clear legal definitions and protections. NFTs represent ownership of unique digital items, and ensuring that their creation and trade respect existing IP rights is crucial. Regulatory bodies like the USPTO and the US Copyright Office are providing guidance on how existing IP laws apply to NFTs, helping creators and businesses secure IP rights for their digital assets. Protecting trade dress and design patents in the metaverse involves ensuring that virtual objects and environments maintain their distinctive look and feel. Trade dress protection extends to the visual appearance and packaging of products, preventing imitation in the metaverse. Design patents protect the ornamental design of virtual items, ensuring that creators can maintain the uniqueness of their digital products. These protections provide legal recourse for creators against unauthorized copying or imitation of their virtual designs.

2. The European Union

The rapid growth of the metaverse and the increasing prominence of NFTs have introduced unique challenges for IP law within the EU. The EU's legal frameworks, designed to provide comprehensive protection and enforcement of IP rights, are being adapted to meet these new digital realities. This section explores how existing EU laws are applied to address IP infringements in the metaverse and with NFTs, focusing on key legislative provisions and emerging regulatory considerations.

[26] 47 U.S.C. § 230, available at https://www.eff.org/issues/cda230 (last visited on April 27, 2024)

i) EU Trade Mark Regulation[27]

Among the cornerstones of trademark law in the EU is EUTMR, setting a system for the uniform registration, protection, and enforcement of trademarks in all member states. The following provisions within EUTMR bear specific importance with respect to the metaverse and NFTs.

Article 9 grants the owner of an EU trade mark the exclusive right to use the mark and to prevent any third party from using identical or similar signs in a way that may create confusion amongst consumers; hence, in metaverse, it becomes very critical, for the simple reason that virtual goods and services bearing registered trademarks require protection from unauthorized use. For instance, if a digital marketplace in the metaverse is selling digital clothes with the logo of Adidas, without any authorization, Adidas can resort to Article 9 to block this type of exploitation. This article makes sure that trademarks remain unique and identifiable even in the digital space. In article 10 Infringement of an EU Trade Mark, it explains what constitutes infringement, including unauthorized use of a trademark in the course of business dealings. This provision will help prevent the sale and distribution of virtual goods bearing protected trademarks without authorization. Article 10, through the laying out of explicit criteria for infringement, provides a robust framework for dealing with trademark infringements in the metaverse. Article 11 mandates that trademarks are not misrepresented in publications, including digital platforms. This provision ensures that trademarks are accurately depicted in virtual environments, helping to maintain brand integrity and prevent consumer confusion.

ii) Directive on Copyright in the Digital Single Market (DSM Directive)[28]

The DSM Directive updates copyright laws to give a better shield to the rights holders in the digital age. A good number of its provisions are relevant for protecting IP in the metaverse and with NFTs. Article 17 requires that online platforms obtain authorization for the use of protected content. This provision establishes platform liability for unauthorized uploads of

[27] Regulation (Eu) 2017/1001 Of The European Parliament And Of The Council of 14 June 2017 on the European Union trade mark (codification). Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1001 (last visited on April 27, 2024)

[28] Directive (Eu) 2019/790 Of The European Parliament And Of The Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC; L130/92; available at: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX%3A32019L0790#:~:text=This%20Directive%20provides%20for%20rules,commerce%20works%20and%20other%20subject (last visited on April 27, 2024)

copyrighted works. The metaverse should design mechanisms that seek to prevent, as far as possible, copyright infringement on platforms with user-generated content, for the respect and protection of creators' rights.

Article 15 grants press publishers the rights to authorize or prohibit online uses of their publications. This article shall be instrumental in ensuring that, within the metaverse, any digital reproductions of press publications are duly authorized and attributed. It helps to preserve the integrity and value of journalistic content in digital environments by protecting the rights of press publishers. Article 15 of the Community Design Regulation lays down a uniform system of registration and protection of designs throughout the Community. It is, therefore, quite useful for protection in the metaverse in terms of digital and virtual designs. Article 10 confers on the owner of a registered Community design the exclusive right to use the design and to prohibit any third party not having his consent from using it. This will give, for example, copyright protection on digital fashion items or virtual real estate in the maximum capacity against copying and/or imitation. Design rights secure the creator's exclusive right over their digital creations, hence their distinctiveness and commercial value.

Article 11 protects unregistered designs for three years from the date of first disclosure within the EU. This is highly relevant in the metaverse, a dynamic fast-changing environment where new digital designs are created and shared every second. In this respect, this provision secures the fact that even unregistered designs have a certain level of protection, hence stimulating innovation and creativity across virtual spaces.

iii) General Data Protection Regulation (GDPR)[29]

Even though it focuses most on data protection, the GDPR has important implications for the metaverse through the regulation of personal data collection and use. Article 25 stipulates that appropriate safeguards are to be integrated into the development of products and services from the very start. This provision will provide that metaverse platforms shall have in-built features to protect users' privacy and their data rights, which can indirectly support the enforcement of IP rights by putting tracing and ownership verification mechanisms in place. Article 17 provides a right for any individual to be forgotten under certain conditions. This right can be very instrumental in the metaverse for safeguarding individuals' privacy and ensuring that data

[29] Regulation (EU) 2016/679 (General Data Protection Regulation); available at: https://gdpr-info.eu/ (last visited on April 27, 2024)

is not misused. The rigid approach to data protection under the GDPR will foster a much safer digital environment within which the management of IP rights and enforcement can be accomplished.

4. India

i) The Information Technology Act, 2000[30]

The Indian Information Technology Act, 2000 (IT Act) was a sort of lead legislation attempting to grapple with concerns relating to digital information and communication. No doubt it provided for a legal framework to deal with a host of cybercrime and e-commerce-related matters; however, it is getting more than apparent that the Act falls short of addressing the peculiar and new challenges posed by metaverse NFTs. This inadequacy can be sourced to specific provisions and the ever-changing character of digital environments.

The IT Act defines "computer", "computer network", "data", and "information" using the traditional usage of the terms referring to digital technologies. The legislation does not attempt to define or cover creations metaverse-specific as virtual worlds and avatars. Thus, there is a wide gap in the present legal framework where activities within such immersive environments are concerned. The absence of definition makes extending existing laws into the realm of new technologies quite cumbersome. The IT Act, Sections 43 and 66, penalize unauthorized access and damage to computer systems and data. These provisions, however, are not good enough and strong enough to apply in the metaverse to complex issues of virtual asset theft, unauthorized modifications of avatars, and breaches of virtual property. Metaverse carries with it sophisticated kinds of interactions and transactions that go beyond conventional data breaches, therefore needing more specific and exhaustive legal protections.

This is the reason why although both Sections 66C and 66D merely discuss identity theft and cheating by personation, this is still inadequate to take care of the subtleties of identity and reputation in the metaverse. Virtual worlds are places where users invest a lot in the creation of digital personas, which are bound to be subjected to really sophisticated forms of identity theft and fraud not totally covered by present legislations. The uniqueness of avatars and digital

[30] Information Technology Act, 2000: https://www.meity.gov.in/content/information-technology-act last visited on April 27, 2024)

identity within the metaverse itself calls for specialized provision against the commission of such nature of crimes. Section 67 pertains to the publishing or transmission of obscene material through electronic means. However, these provisions do not take into consideration the heterogeneous and contextual character of content within the metaverse. It is possible to host a wide array of user-generated content within virtual environments, some of which may not readily fall into the categories of obscene or non-obscene as defined under the Act. Further, policing content in real-time virtual spaces presents a set of problems that the present law does not account for.

The IT Act does not deal explicitly with issues of ownership and the transfer of digital assets like NFTs. Section 43, which handles unauthorized access, and Section 66, which deals with damage, also do not touch on this very complex area regarding the question of digital ownership and the transferrability of unique digital tokens. NFTs belong to a new class of digital assets that demand clear legal definitions of mechanisms to verify ownership, establish authenticity, and ensure secure transactions. The IT Act remains highly inadequate in relating to intellectual property rights over digital creations that are sold as NFTs. Traditional IP laws do not apply seamlessly to NFTs, which can be subject to a number of layers of ownership and licensing agreements. Specific regulations are required to protect the rights of creators against unauthorized minting and selling of digital works as NFTs. Section 69 confers powers upon the government to intercept, monitor, or decrypt information for security-related purposes. This is, however, very hard to apply in the decentralized platforms hosting NFTs or metaverse activities. Most of the said platforms function across several jurisdictions, and activities are conducted outside the reach of national laws. Nothing in the Act provides the mechanism through which international cooperation or cross-border dispute redressal can be sought pertaining to transactions taking place in the metaverse or relating to NFTs.

ii) The Trademarks Act, 1999[31]

The Trade Marks Act is arguably one of the most exhaustive legislations for the protection of trademarks in India. However, a careful scrutiny in the light of the exponentially expanding digital universe of metaverse brings to the fore numerous inadequacies. This paper will delve into some of the provisions of the Act, highlighting its inadequacy to fight trademark

[31] Trade Marks Act, 1999: https://ipindia.gov.in/writereaddata/Portal/Images/pdf/trade-marks-act-1999.pdf last visited on April 27, 2024)

infringement in the metaverse. Definitions of many of the terms used in this Act are given in Section 2 of the Trade Marks Act, 1999. It does not define or expressly cover digital environments like metaverse. Metaverse engulfs a virtual world where the assets would exist in a digital format, and in that sense, trademarks are no exception, and their infringement may take place in a manner not contemplated by the present definitions. It currently only covers goods and services; therefore, in effect, there is an entirely open gap in protection for trademarks presently used in virtual environments. Section 29 of the Act explains what becomes infringement of a registered trademark. According to it, infringement is the unauthorized use in the course of trade of a mark that is either identical or deceptively similar to a registered trademark and is liable to cause confusion among consumers. However, this provision caters more toward physical goods and services. Infringement in the metaverse clearly would not result in direct consumer confusion in the classical sense, but the harmful effects on the trademark owner's interests are still there, for it would be use of a trademark in absolutely new contexts, such as virtual goods, services, and avatars, which the language of Section 29 as it is cannot deal with appropriately. Section 134 of the Act deals with the jurisdiction of courts in cases of trademark infringement. The territorial jurisdiction lies either at the place where the infringing activity has taken place or where the plaintiff resides or has his place of business. Metaverse is a borderless space and the acts of infringement may take place across various jurisdictions simultaneously. Since the existing framework does not provide for such scenarios, it is difficult to establish jurisdiction and enforcement of trademark rights within the metaverse.

Section 29(4) deals with the dilution and tarnishment of well-known trademarks, whereby the manner in which the mark is used is detrimental to its distinctive character or repute. Though this provision indeed extends protection against non-confusing uses to a certain extent, it is still framed with a physical context in mind. For example, trademarks can be diluted or tarnished within the metaverse by being associated with inappropriate virtual content or through misuse by an avatar. Inappropriate use of the trademark by avatars is not explicitly addressed in current legislation. Parts 18 and 19 deal with Registration of trademarks. While these sections have ensured that trademarks can be registered for goods and services, they do not include provisions per se for the virtual goods or services offered in the metaverse. By this, it would mean that the trademarks registered under the current Act are not automatically extendable to their use in virtual environments, which would otherwise leave another legal gray area open to exploitation. The enforcement mechanisms under the Act, inclusive of remedies for

infringement, are tailored towards physical or digital infringements in traditional contexts of the internet. None of these allow for how the metaverse is more decentralized and sometimes anonymous in transactions and interactions, making the tracing of identification and action against infringers much more difficult within such virtual worlds.

iii) The Copyright Act, 1957[32]

The Indian Copyright Act, 1957, as amended in 1999, is pretty exhaustive with respect to traditional forms of intellectual property but runs into great difficulties when applied to the metaverse, especially in a case of trademark infringement. Present provisions under the Act are based on a framework designed before the digital revolution and do little to address the issue of complexities for IP protection in virtual environments. A close analysis of certain provisions under the Copyright Act reveals the insufficiency of the Act to deal with trademark infringement in the metaverse.

It is and, hence, primarily aimed at safeguarding original literary, dramatic, musical, and artistic works, cinematograph films, and sound recordings. Section 2 of the Act defines these, and Section 13 enumerates which works may be subject to copyright protection. However, these definitions exclude digital trademarks or virtual assets. The metaverse involves using trademarks in a way that the traditional categories of works—like goods and services—haven't considered. This lacuna in the scope of the Act may suggest that enhanced legal protection under the Act accorded to traditional trademarks will not extend to their metaversal counterparts, leaving them bereft of any legal protection against unauthorized uses and infringements within the metaverse. Section 14 of the Act enumerates exclusive rights of the copyright owner to reproduce, distribute, perform, and display the work. These are couched in terms of both physical and digital media and hence do not embrace or extend to the complex interactions within the metaverse. For example, it does not provide any explicit protection for the right to display a trademark in a virtual world or on a digital avatar; thereby creating a gap in protection against passing off in the metaverse. Digital manifestation and use of trademarks in virtual environments require more explicit legal definitions and protections that the Act, in its current form, has not provided.

[32] The Copyright Act, 1957. Available at: https://copyright.gov.in/documents/copyrightrules1957.pdf last visited on April 27, 2024)

Section 51 deals with what constitutes an infringement of copyright. While this includes unauthorized reproduction, distribution, and public performance, the latter does not particularly apply to certain kinds of infringement that may take place in virtual environments. In other words, though the current legislative framework of 1985 legally covers the creation and sale of unauthorized trademark-bearing virtual goods or use of trademarks within virtual reality experiences, it renders tackling such infringement cases adequately quite impossible. What is more, the focus of the Act on traditional forms of infringement does not provide for the multifaceted nature of digital and virtual trademark violations. Specific exceptions to infringement include section 52, which covers provisions of fair use in cases of criticism, review, and news reporting. These provisions were drafted having traditional media in mind and are at once too generic to take into account the subtleties of virtual environments, where the boundaries of fair use are often elided. Further, it is seen that Section 65A, dealing with protection to technological measures, is inadequate to take care of the circumvention of protections in virtual spaces where digital assets may be easily duplicated for any misuse. Given the dynamic and interactive nature of the metaverse, more robust and adaptable fair use guidelines would avoid misuse and at the same time save legitimate creative expressions from infringement.

Sections 55 and 62 provide for a number of remedies for infringement that include the equitable remedy of injunctions and the legal remedy of damages. However, the enforcement mechanisms were enacted with the physical world in mind and are thereby not as suitable for the decentralized and often anonymous metaverse. The difficulties of identifying infringers and taking action against them in the virtual world are heightened when compared with the real world, and there lack proper tools within the existing provisions for tackling such difficulties. Due to the decentralized nature of the metaverse and users' anonymity, it is hard to enforce conventional legal remedy. As such, it calls for more innovative and technology-driven solutions. One of the key issues concerning the application of the Copyright Act to the metaverse is the lack of clear jurisdictional guidelines. The Metaverse is a global phenomenon. For example, infringing activities may occur in more than one country at the same time. The Act does not provide a framework for establishing jurisdiction, and as such, in most instances, it defeats the enforcement of copyright protection in virtual environments. Without jurisdictional guidance, therefore, enforcement actions can become mired in legal complexities, reducing how much effectiveness the Act can really offer for digital trademarks.

C. CONCLUSION

This article brings out a yawning gap between the application of pre-existing legal frameworks in existing IP laws and the digital environments such as the Metaverse and NFTs. The Paris and Berne Conventions, the Madrid System, the PCT, and TRIPS are foundational international treaties that fall short of covering virtual goods and digital assets. National legislations in the US, the UK, the EU and India also falter under these complexities in IP protection within the Metaverse. Traditional IP laws, conceptualized to apply to physical goods, need adaptation to cover virtual environments within which digital assets can easily be copied and transmitted. NFTs have very specific challenges because intellectual property laws do not protect digital content against unauthorized copying. To address these types of issues requires international collaboration on both updated legislation and the establishment of new frameworks tailored for digital contexts. There are technological innovations in blockchain and AI that can make IP enforcement more efficient. Education is important for an enabling environment about IP, collaboration with the industry, capacity building for agencies, and for legal professionals as well. By considering those factors, an improved scheme will put in place a better system for IP protection in the digital age.