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Legal Analysis of Intellectual Property Rights in the Metaverse

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The metaverse is a virtual realm that creates a virtual world by combining Blockchain, Augmented Reality (AR), Virtual Reality (VR), Artificial Intelligence (AI), and the Internet of Things (IoT). Through digital Avatars, users may engage, produce, and transact with digital assets. It marks a new frontier in human interaction and business. However, the legal environment of the metaverse is complex and evolving, posing several challenges and effects, particularly in the realm of intellectual property. Intellectual property rights (IPR), including copyrights, trademarks, patents, and trade secrets, are crucial for safeguarding digital assets, brand identity, and inventions in the metaverse. This article aims to present an outline of the legal frameworks related to intellectual property rights in the metaverse. It dives into the legal protections in India currently, along with the protections present globally. It further looks into some of the landmark cases, as well as the challenges in the current system, and the recommendations to improve implementation.

Keywords: *intellectual property rights, metaverse, legal challenges.*

INTRODUCTION

The use of technology all around the world has changed dramatically over the past few years. Modern society is highly influenced by the use of various technologies. It has changed the way we interact, work, socialise, etc. The metaverse is one example of a new technology that

is undergoing fast change and dynamic development. The metaverse is an online ecosystem that enables individuals to communicate in three dimensions.

This metaverse can be used for a wide range of experiences as it blends both the digital and physical worlds. It can be used by businesses to conduct meetings. In the education sector, it can be used to make learning more interactive through virtual classes and labs. The industry in which it is most used is the gaming industry, where users use the metaverse to make their gaming experience more interactive.

As more individuals enter this market, it becomes more challenging to determine who owns the intellectual property (IP) rights to virtual assets and works. Applying intellectual property rules in the metaverse is challenging since virtual worlds and online communities may gather and share vast quantities of personal data. To preserve intellectual property, a mix of technological, organisational, and legal measures may be required.

Many different types of Intellectual Property can be used in the metaverse. Avatars, buildings, and user-created landscapes are examples of virtual things protected under copyright law. Trademark law protects logos and other branding elements used in virtual reality, but patent law protects technological developments made during the creation of the metaverse.

To be protected under patent rules, technology must meet specific requirements, such as novelty, innovative steps, and industrial use. Because of this, determining whether a particular metaverse patent has been violated by other technologies is probably going to continue to be a challenging subject, especially considering how quickly the technology is developing.

THE METAVERSE

The Metaverse is a computer-generated virtual reality world in which users may interact with one another. According to the Cambridge Dictionary, the metaverse is a virtual world where humans, as avatars, interact with each other in a three-dimensional space that mimics reality. The Metaverse blurs the distinction between the physical and virtual worlds. The Metaverse evolves into a new universe throughout time. For some, it's a collection of online virtual worlds. Others, on the other hand, focus on the potential contributions of

particular technologies, such as blockchain, virtual reality, or augmented reality, to access these worlds.

The best way to characterise the Metaverse is as the modern internet's three-dimensional successor. According to current projections, the Metaverse will be made up of several synchronous, interconnected virtual platforms that are run constantly and that users may enjoy through their avatars. Because virtual material will be seen in real life and users will have easy access to the Metaverse via a variety of devices, the lines between the digital and physical worlds may become less distinct.

We are currently experiencing one or more Metaverses. Instead of a single metaverse, we have several distinct platforms, each with its own set of regulations, economy, and user base. Currently available platforms include Roblox, Fortnite, and others that let users interact with one another, play games, and purchase virtual goods using their avatars. Although the metaverse's present stages are not entirely connected, they could someday come together to create a single, massive virtual environment.

Despite its ongoing development, the metaverse has already garnered global notice. The metaverse is expected to have a market value of \$828.95 billion in 2028 and have 700 million users globally by 2030. Established brands from numerous sectors are already interacting with the metaverse. Google and Microsoft, for example, have invested heavily in the metaverse's infrastructure, while Nike and Walmart have also created metaverse presences.¹

RELATION BETWEEN METAVERSE AND IPR

The metaverse consists of multiple technologies like Blockchain, Augmented Reality (AR), Virtual Reality (VR), Artificial Intelligence (AI), and the Internet of Things (IoT). Intellectual property rights can be fundamental in protecting these technologies. They can help define who owns the technology, control misuse, and help owners enforce rights.

Patents are exclusive rights that are awarded to any invention, such as a product that solves an existing problem or a method of doing something more efficiently. In the metaverse, patents can be of two types: software and hardware patents. Software patents can be obtained

¹ Rakiya Moore, 'IP Rights in the Metaverse' *Reuters* (August 2023) <<https://www.reuters.com/practical-law-the-journal/transactional/ip-rights-metaverse-2023-08-01/>> accessed 15 March 2025

for technologies like blockchain, AI algorithms, and smart contracts. Physical devices that improve the virtual experience can also get patents. For example, headsets, cameras, haptic gloves, scanning sensors, and AR and VR technology.² Microsoft has obtained a patent for metaverse-related VR innovations.

Copyrights are any original work created by any creator, like music, literature, artwork, and software. Virtual assets like NFTs, Avatars, Digital art, Music, Videos, and designs are all eligible for copyright protection. Many artists sell NFT-based digital artworks on websites like OpenSea, where copyright law also applies. An NFT (Non-Fungible Token) symbolises a unique digital asset. There are a lot of disputes regarding copies of the artwork. Also, purchasing an NFT does not instantly transfer the artist's rights to the buyer. However, because digital artworks lack clarity, many buyers assume that they also hold the copyright.

Branding in virtual markets like logos, names, etc., also requires protection and can be it under a trademark. A trademark can be a mark, symbol, design, colour, combination of colours, shapes, etc., that helps identify a product of a particular company or individual. For example, Nike's Nike land in Roblox, where users buy virtual sneakers. Trade secrets are also a part of intellectual property, data innovation, and data security in algorithms, AI-driven virtual assistants, and VR worlds also require protection.

LEGAL FRAMEWORK FOR METAVERSE IN INDIA

In India, intellectual property laws consist of various laws. These laws do not talk about the metaverse specifically, but they do address virtual assets and digital transactions.

The Patents Act 1970: Inventions such as AI algorithms, VR tools, AR technology, etc., are granted patent protection. According to Section 2(1)(j) of the Patents Act,³ an invention is a new technique or product that is unique, non-obvious, and applicable to the industry. Additionally, Section 3(k)⁴ mandates that algorithms, computer programs, business processes, and mathematical techniques be patentable. Software patents are not included.

² 'Intellectual Property rights in the Metaverse: Navigating the Virtual Frontier' (IIPRD, 10 June 2024) <<https://www.iiprd.com/intellectual-property-rights-in-the-metaverse-navigating-the-virtual-frontier/>> accessed 15 March 2025

³ Patents Act 1970, s 2(1)(j)

⁴ Patents Act 1970, s 3(k)

Nonetheless, India allows for the patenting of AI-based concepts that are unique, non-obvious, and beneficial.⁵

The Copyright Act 1957: This law was created to safeguard artistic, cinematic, musical, and literary creations, including digital ones. The definition of literary work in Section 2(o)⁶ of the Act is computer databases, programs, tables, software, and compilations that constitute a computer system. Computer programs are covered by a copyright owner's exclusive rights,⁷ according to Section 14.⁸

The Trademark Act 1999: Trademarks granted for logos, symbols, signs, etc., are protected by this statute. The act's Section 2(zb)⁹ defines 'Trademark'. Additionally, Section 29¹⁰ discusses trademark infringement, which may be used in the event of unlawful usage. Section 34¹¹ addresses prior usage and enables brands to stop cybersquatting, which is the practice of registering, trafficking, or using a domain name with malicious intent to take advantage of another person's goodwill associated with a trademark.¹²

PROTECTING TRADE SECRETS IN THE METAVERSE

Trade secrets like algorithms, VR designs, and AI-based virtual assistants are prone to attacks. Although there is no specific legislation regarding the protection of trade secrets. They can be protected under the contract laws and the IT Act 2000. Non-disclosure agreements can be used to protect innovations. The IT Act can be used to penalise unauthorised access to data.

⁵ Harshal Chhabra and Arihant Sethia, 'The Impact of Artificial Intelligence on Intellectual Property Rights: A Case for Reform in Indian Patent Law by "Innovative Oversight" Approach' (*Indian Journal of Law and Technology*, 28 November 2024) <<https://www.ijlt.in/post/the-impact-of-artificial-intelligence-on-intellectual-property-rights-a-case-for-reform-in-indian-p>> accessed 15 March 2025

⁶ Copyright Act 1957, Section 2(o)

⁷ 'Intellectual property rights in the metaverse – Copyright' (*ALMT Legal*) <<https://www.almtlegal.com/articles-pdf/ALMT%20Article%20-%20Intellectual%20property%20rights%20in%20the%20metaverse%20-%20Copyright.pdf>> accessed 15 March 2025

⁸ Copyright Act 1957, s 14

⁹ Trademark Act 1999, s (zb)

¹⁰ Trademark Act 1999, s 29

¹¹ Trademark Act 1999, s 34

¹² Sangeetha Lakshmi V, 'The Menace of Cybersquatting and the available Legal Measures to Mitigate Abuse of Domain Names' (2022) 2(1) *Indian Journal of Integrated Research in Law* <<https://ijirl.com/wp-content/uploads/2022/01/THE-MENACE-OF-CYBERSQUATTING-AND-THE-AVAILABLE-LEGAL-MEASURES-TO-MITIGATE-ABUSE-OF-DOMAIN-NAMES.pdf>> accessed 15 March 2025

MANAGING DIGITAL COUNTERFEITING AND PLATFORM RESPONSIBILITY.

The IT Act 2000 also helps regulate digital transactions, online fraud, and liability to intermediaries.

GLOBAL IPR TREATIES THAT HELP IN THE PROTECTION OF THE METAVERSE

TRIPS Agreement (Trade-Related Aspects of Intellectual Property Rights) (1995): The TRIPS Agreement protects copyrights, trademarks, and patent enforcement. For example, Computer programs, whether in source or object code, shall be protected as literary works as per Article 10.¹³

WIPO Copyright Treaty (WCT) (1996): The WIPO Copyright Treaty (WCT), established in 1996, aimed to modernise international copyright protections for the digital landscape, especially the internet. This treaty covers digital works, software programs, as well as unauthorised replication of virtual assets.¹⁴ In the Metaverse, the WCT becomes increasingly vital. The Metaverse is a completely digital and immersive world where people produce, purchase, sell, and interact with digital goods such as virtual art, music, games, and even virtual real estate.

NICE Classification for Trademarks (1957): The Nice classification is an international trademark classification system used to identify products and services. The nice categorisation does not specifically refer to the terms 'Metaverse' and/or 'NFTs'; nonetheless, companies seeking protection in the online and virtual world are presently using applicable legal classifications to safeguard the sale of their products and services in the Metaverse.

Class 9 virtual products that may be downloaded include computer programs that display shoes, clothes, headgear, eyeglasses, backpacks, sports bags, toys, movie stills, shapes, labels, devices, accessories, merchandise, and more for use online and in virtual worlds.

Class 35 Online retail shop services offer virtual items, such as shoes, clothes, headgear, glasses, bags, sports bags, backpacks, sports equipment, toys, artwork, movie stills, shapes, labels, devices, accessories, etc.

¹³ TRIPS Agreement 1994, art 10

¹⁴ WIPO Copyright Treaty 1996

Class 41 entertainment services, including virtual shoes, clothes, headgear, eyeglasses, backpacks, sports bags, art, toys, and accessories for use in virtual worlds that are available online and cannot be downloaded.¹⁵

IPR PROTECTION IN DIFFERENT COUNTRIES

South Korea: The Virtual Convergence Business Promotion Act makes Korea the first country in the world to pass legislation explicitly geared to encourage the virtual convergence (metaverse) industry. This Act becomes effective in 2024. This legislation establishes criteria for the application of IP rights in the virtual environment. It also enables businesses to self-regulate and safeguard consumers. The government is also offering financial, legal, and technical assistance to the business.¹⁶

It lays forth the legal requirements for businesses and individuals operating in these online environments. In addition to tackling issues like privacy, intellectual property, and virtual crimes, the Act places a high priority on user rights and encourages innovation by giving businesses developing metaverse-related services government funding, assistance, and policy recommendations. The Act seeks to create a safe, moral, and sustainable virtual environment by striking a balance between regulation and growth, making South Korea one of the first governments to proactively prepare for the challenges and opportunities of the digital future.

United States of America: The US has laws in place for the protection of IPR in the digital age. The Digital Millennium Copyright Act (DMCA) is designed to protect copyright in the digital age.¹⁷ It prohibits the circumvention of digital rights management (DRM) systems and makes it unlawful to use, copy, or distribute copyrighted information online. The DMCA also established a safe harbour provision that prevents internet services like YouTube from being held liable for copyright infringements committed by their users, as long as the infringing content is immediately removed after discovery. It has a profound influence on worldwide regulations governing online copyright enforcement.

¹⁵ Rahul Dhote and Bhavya Aggarwal, 'Protection And Enforcement Of Intellectual Property In Metaverse' (ANM Global Blog, 21 October 2022) <<https://anmglobal.net/protection-and-enforcement-of-intellectual-property-in-metaverse/>> accessed 15 March 2025

¹⁶ Virtual Convergence Industry Promotion Act Set for Full Implementation 2024

¹⁷ Digital Millennium Copyright Act 1998

European Union: The European Union issued a Directive on 17 April 2019 on copyright and related rights in the Digital Single Market.¹⁸ Under this, it makes online platforms directly liable for copyright infringement. It offers protection to creators, journalists, and publishers. Encouraging increased use of intellectual materials in research, education, and preservation, as well as holding platforms like YouTube more responsible for user-submitted copyrighted content, are important components. The Directive seeks to strike a compromise between the interests of EU digital platforms, authors, and users.

JUDICIAL CASES

Recent case judgments show the complexities of intellectual property enforcement in the metaverse.

Hermès v Mason Rothschild: Hermès alleged that Mason Rothschild's development and promotion of Meta Birkin NFTs infringed upon its trademark rights. The main legal issues were dilution, trademark infringement, and cybersquatting. Hermès asserted that Rothschild's digital artworks infringed on its legally protected intellectual property. On February 8, 2023, a court held Hermès liable for all three allegations of cybersquatting, dilution, and trademark infringement. The verdict awarded Hermès over \$133,000 in damages. This historic decision established a precedent for businesses wishing to protect their trademarks in the metaverse and generated discussion over whether Non-Fungible Tokens (NFTs) are protected by intellectual property laws.¹⁹

Roblox's Intellectual Property Ecosystem: Due to users uploading music or virtual goods that are protected by copyright without permission, Roblox has been sued several times for copyright infringement. Stricter IP compliance procedures have been put in place by the platform to solve these problems.²⁰

Solid Oak Sketches v 2K Games:²¹ The firm behind the video game series NBA 2K, 2K Games, was sued by Solid Oak Sketches, the owner of the rights to several tattoos. The

¹⁸ Directive (EU) 2019/790 of the European Parliament and the Council on copyright and related rights in the Digital Single Market 2019

¹⁹ *Hermes Int'l v Rothschild* [2020] 22-CV-384 (JSR)

²⁰ Tahiti Chatterjee, 'When IP Law Meets the Metaverse: Protecting Virtual Goods and Avatars' (*Le Droit India*, 22 December 2024) <<https://ledroitindia.in/when-ip-law-meets-the-metaverse-protecting-virtual-goods-and-avatars/>> accessed 15 March 2025

²¹ *Solid Oak Sketches, LLC v 2K Games, Inc.* [2020] 449 F. Supp. 3d 333

claimant claimed that the video game's athletes' digital avatars infringed their copyright because they bore some of the same geometric patterns found in the tattoos of famous basketball players, such as LeBron James. The defendant won the case by using the implied license defense, the fair use defense, which is based on the artistic nature of video games, and the de minimis use defense, which holds that an infringing work is not substantially similar to the copyrighted work and is therefore not infringing because so little of the protected work has been used.²²

MDY Industries, LLC v Blizzard Entertainment, Inc:²³ MDY Industries, LLC (MDY), the developers of the software program WoW Glider (Glider), loaded a copy of a copyrighted Blizzard Entertainment, Inc. and Vivendi Games, Inc. (collectively, Blizzard) game into computer memory on the game owners' computers in violation of the game's End User License Agreement (EULA), the US District Court for the District of Arizona ruled that a software application that allowed players to play the popular online game World of Warcraft automatically violated Blizzard's copyright.²⁴

AM General LLC v Activision Blizzard:²⁵ AM General LLC, the maker of the iconic Humvee military vehicle, sued the Call of Duty video game publishers in 2017, alleging that the game's representation of the vehicle violated trademark laws by copying its design. However, because Activision aimed to create a video game that accurately depicted present combat, the US District Court for the Southern District of New York determined that the company's use of the vehicle and trademarks was creative and met the Rogers test standards.

CHALLENGES IN THE IMPLEMENTATION OF IPR IN THE METAVERSE

Traditional concepts of intellectual property protection encounter significant challenges in the Metaverse. Because of the nature of the virtual world, digital assets may be easily manufactured and replicated, with no clear distinction between usage and ownership. As a result, enforcing intellectual property rights is far more challenging than in the real world.

There is a lot of ambiguity about virtual goods and the subject matter since it is still a developing field. In virtual goods and avatars, is the AI developer the owner, the user, or

²² Intellectual Property rights in the Metaverse: Navigating the Virtual Frontier (n 2)

²³ *MDY Industries, LLC v Blizzard Entertainment, Inc.* [2010] 629 F.3d 928

²⁴ *Ibid*

²⁵ *AM Gen. LLC v Activision Blizzard, Inc.* [2020] 450 F. Supp. 3d 467

both? Even the legal status of an NFT (Non-fungible Token) is debatable. NFTs are digital assets that symbolise ownership of a unique product, like music, art, etc. This is stored on a blockchain, so it is safe, verifiable, and non-interchangeable. There is a lot of uncertainty about the legal status of an NFT. Is there ownership, or are only usage rights given to the buyer? Or is it the buyer's or the original owner's right to change the NFT? And the status of copyright regarding stolen NFTs.

In the Metaverse, copyright infringement in digital assets, including 3D models, avatars, and virtual goods, can be easily copied without permission. Further, there is a lot of unauthorised use of trademarks in the metaverse, where real-world brands are replicated to make the metaverse more believable. Another major problem in the metaverse is the jurisdictional challenges that it poses. A Japanese creator created a virtual product like an NFT in Japan. It can be sold on a platform created and operated by a UK-based company and purchased by a user from India. The metaverse operates across multiple jurisdictions, which makes it difficult to determine which countries' laws should be imposed.

Digital counterfeiting and Intellectual property theft are widespread in the metaverse. The use of deepfakes and AI-generated content greatly threatens copyrighted work. Since users in the metaverse often operate under false identities, identifying infringers is harder. Another issue is about accountability and tracking of infringement. Blockchain networks on which metaverse platforms usually lack centralised authority to uphold intellectual property rights. The creators of virtual worlds like Roblox, Decentraland, etc., must figure out how to track IPR infringement, and although there are safe harbour clauses that help reduce the liability of platforms, the enforcement is insufficient.

Additional worries over data breaches are prevalent in the digital industry. Trade secrets about software and AI-generated content are crucial, but they are also vulnerable to hacking, which might cause damage. The existing laws are very ambiguous when it comes to the metaverse. The Berne Convention and the TRIPS agreement don't cover the protection of the metaverse. In India, the Copyright Act, the Trademark Act, and the Patent Act provide some protection, but not explicitly.

RECOMMENDATIONS

As the metaverse is an evolving field, there is a need to make a clear legal framework. The current statutes are outdated with the recent technological advancements, so the statutes must be amended to incorporate provisions unique to the metaverse.

For proper regulation of the metaverse platforms, the Platforms can have an automatic recognition mechanism in place to identify copies and monitor and enforce intellectual property regulations. The creators of the metaverse platforms can use disclaimers and reporting procedures to raise consumer knowledge of IPR.

Now, in the current systems, a trademark is present for physical goods, and sometimes, even unconventional trademarks for sound or fragrance are given. Similarly, proper guidelines for registration for trademarks of virtual goods can be provided.

WTO and WIPO are the main organisations that make rules for IPR-related issues. They can bring together countries and establish precise rules regarding jurisdiction and the use of IPR in the metaverse.

Currently, due to a lack of proper guidelines about rights in the metaverse, the parties need to rely on contracts about the rights and obligations. So, when purchasing and selling, the use of smart contracts can be done for cross-border transactions to clarify rights and eliminate uncertainty.

CONCLUSION

The Metaverse provides unprecedented opportunities for economic progress, creativity, and discovery. It also, however, provides challenging problems for the enforcement and preservation of intellectual property. Countries must develop flexible strategies to handle the Metaverse's particular risks and opportunities as the digital world changes.

The metaverse is changing the way we think about ownership, innovation, and commerce. In a world where the virtual and physical are becoming increasingly linked, securing digital assets and virtual real estate is more than simply a legal concern; it is a need. Issues arise for both intellectual property law and holders of IPRs. This creates an opportunity for intellectual property law to evolve and adapt to match technological advancements.

Integrating into the Metaverse system and taking advantage of new opportunities will be crucial and financially rewarding.

By forecasting several future scenarios for the Metaverse, determining the likelihood of illegal activity, and developing specialised forensic tools and investigative frameworks, we can make sure that intellectual property is safeguarded in this new digital frontier.