BALANCING INNOVATION AND OWNERSHIP: NAVIGATING INTELLECTUAL PROPERTY RIGHTS IN THE AGE OF ARTIFICIAL INTELLIGENCE AND THE METAVERSE

Aaryan Raj Kaushik*

ABSTRACT

The exponential breakthroughs in Artificial Intelligence (AI) and the development of the metaverse have revolutionized innovation, creativity, and ownership, but they have also brought some exceptional challenges to traditional Intellectual Property Rights (IPR). The article begins with a historical outline of IPR in terms of its fundamental purpose in motivating innovation and preserving artists' rights, before identifying its limits in dealing with the complexities of AI-generated material and virtual assets in the metaverse. The goal of this article is to describe the relationship between intellectual property rights, artificial intelligence, and the metaverse, and to argue for a balanced strategy that encourages innovation while ensuring equal ownership and accessible. The study investigates the major problems, which include intellectual property disputes over NFTs and virtual products, cross-jurisdictional enforcement issues, and debates over authorship of AI-generated works. The article also investigates the ethical and societal ramifications of monopolization, collaboration, and publicly available technology. Comparative viewpoints from international legal systems and case studies have been emphasized, demonstrating approaches to addressing these issues. The article examines possible technological solutions such as blockchain and AI patenting systems, as well as policy improvements such as AI work licensing models and standardized virtual asset ownership rights. Finally, this paper argues for a dynamic and innovative intellectual property system that responds to technological change while promoting fair, innovative, and accessible technology use in the digital era.

Keywords: Intellectual Property Rights, Metaverse, Artificial Intelligence, Innovation.

*BA LLB, FIRST YEAR, NATIONAL LAW UNIVERSITY ODISHA, CUTTACK.

INTRODUCTION

The convergence of ownership and creativity has long been a critical issue in the field of Intellectual Property Rights (IPR). The potential of AI to make creative works, along with the interesting virtual settings of the metaverse, has blurred the traditional lines of authorship, protection, and ownership. Nonetheless, the rise of breakthrough technologies such as the metaverse and artificial intelligence (AI) has brought this intersection to the forefront, presenting extraordinary opportunities and difficulties. These technologies are constantly redefining sectors and modifying societal relationships, as well as putting existing legal frameworks established for a pre-digital period to the test of flexibility.

The attempt to maintain a balance between encouraging innovation and safeguarding intellectual property has become more crucial than ever in this dynamic landscape. To navigate this intricated equilibrium, a forward-thinking approach is needed that considers the evolving nature of technology, the ethical dimensions of ownership and the societal impact associated with it. The overly rigorous IPR policies could hinder creativity and suppress collaboration[1] and the risk of inadequate protections can undermine the incentives that drive innovation.

THE EVOLUTION OF INTELLECTUAL PROPERTY RIGHTS

Intellectual Property Rights is a general term covering patents, copyrights, trademarks, industrial, geographical implications, and undisclosed information (trade secrets)[2]. The origins of intellectual property rights can be found in ancient societies, where various forms of protection for innovation and creativity were acknowledged. However, throughout Europe's Renaissance, the formal legal foundations for intellectual property rights (IPR) started to take shape, especially in relation to copyrights and patents.

Despite not being officially recognized, the origins of intellectual property rights can be discovered in ancient India, where knowledge, creativity, and invention were highly valued. The significance of defending the rights of creators and innovators is shown in ancient writings and scriptures like Kautilya's Arthashastra. The practice of protecting one's inventions and knowledge from unauthorized use was common, even though There was no formal legal

[1] Ove Granstrand and Marcus Holgersson, 'Innovation Ecosystems: A Conceptual Review and a New Definition' (2020) 49(4) *Research Policy* https://www.sciencedirect.com/science/article/pii/S0048733316301159 accessed 20 March 2025.
[2] Rachit Garg, 'All about Intellectual Property Rights (IPR)' (*iPleaders*, 31 May 2022) <https://blog.ipleaders.in/all-about-intellectual-property-rights-ipr/> accessed 20 March 2025.

framework akin to the laws governing intellectual property rights today. The formalization of intellectual property rights in India began during the British colonial period. As the British East India Company asserted its influence in India, the necessity to safeguard trade secrets, innovations, and literary works became obvious. The British wanted to create rules that resembled those in England, resulting in the development of the first official intellectual property restrictions in India[3].

By giving creators, innovators, and companies the financial incentives and legal protection they require to invest in the creation of novel concepts, goods, and technologies, intellectual property (IP) plays a crucial part in encouraging innovation. Without sufficient intellectual property protection, innovators would run the danger of rivals stealing or copying their ideas, which would deter R&D spending. Individual success and overall economic progress are fueled by the exclusive rights provided by intellectual property (IP), such as patents, copyrights, and trademarks, which establish a regulated environment in which inventors can recoup their investments and acquire competitive advantages. The key ways in which IP serves as a power incentive for innovation are economic motivation through market exclusivity, attracting investments and funding, encouraging R&D and technological advancement and promoting competition and differentiation.

Without these safeguards, rivals may simply steal and disseminate novel goods, innovations, or creative works, which would discourage investment and creativity. IP protections are especially important in sectors like software, entertainment, biotechnology, and pharmaceuticals.

CHALLENGES OF IPR IN THE ERA OF AI AND METAVERSE

There are many challenges that are constituted by AI and the metaverse in the field of IPR one of the most profound challenges lies in regulating the ownership of contents that are created by specialized AI systems. Works generated by AI often require minimal human intervention, unlike conventional creative processes. There are many questions about whether the user of AI, the creator of AI or the AI itself can be termed as the owner of these works.

Legal issues faced by users and companies in the metaverse encompass intellectual property, privacy, and jurisdiction. Enforcing intellectual property laws like copyright and trademark

[3]'History of Intellectual Property Rights' <https://lawbhoomi.com/history-of-intellectual-property-rights/> accessed 20 March 2025.

regulations can be challenging due to the decentralized and virtual nature of the platform. Determining ownership and usage rights of virtual assets within the metaverse is also complex. Privacy concerns arise as users may require greater control over their data, raising potential conflicts with data protection regulations such as GDPR. Jurisdictional challenges emerge as it is unclear which laws govern the metaverse and resolving disputes within it can be contentious.

The business aspects of the metaverse go beyond creating memorable personal experiences. Through metaverse technology business operators offer customers opportunities to experience their merchandise along with their services in real time. Internet clothing users could benefit from virtual trials of every product before making their purchasing decisions. Future innovations including metaverse technology will create better experiences which means we must know about associated legal challenges[4].

Laying a foundation for how AI, metaverse, and IP rights converge reveals critical legal challenges with clear grey areas. These stem mainly because most current IP authorities were established before the so-called 'digital age,' not accounting for specifics triggered by the use of sophisticated technology.

The challenges can be broadly classified into three areas which are ownership of content, IP in decentralized virtual spaces and legal ambiguities due to outdated frameworks. The biggest question when it comes to ownership of AI-generated content is who owns the work? The developer of the AI system, the user who prompts the creation, or the AI system itself? Lack of clear ownership leads to different opinions as to Licensing, royalties and the commercialization of AI-generated works. If creators cannot claim ownership, they may not be motivated to spend time developing AI tools or training good datasets. The metaverse is a new and constantly developing environment where users can socialize, work, and trade digital assets in a virtual world that is, increasingly frequently, also decentralized. Assets in the metaverse, for instance, NFTs and virtual land – bring novel concepts of ownership. Nevertheless, property rights relating to these assets are usually not well defined. For example, buyers of NFTs very often think they own the content behind it and in many cases, all they own is the token and the copyright.

[4] Guido Noto La Diega, Francesco Paolo Casaleggio, and Massimo Russo, 'AI and Intellectual Property: A European Perspective' (2022) 62 *International Journal of Information Management* https://www.sciencedirect.com/science/article/pii/S0268401222000767 accessed 20 March 2025.

Virtual environments contain messages generated by end-users that may violate the laws of trademarks, which can lead to dilution and consumer confusion. For Example Nike used legal actions to defend itself against Virtual Nike commercial violations of virtual sneakers[5]. Current IP laws were formulated at a time when creators were human beings, and creations were tangible products or distinctly, identifiable works in digital format. The emergence of AI and the metaverse have both left voids. AI systems often rely on vast datasets that may include copyrighted material. Lawsuits, such as those filed by artists against AI companies for unauthorized use of their works in training datasets, are becoming increasingly common[6].

Today, there is a need for tremendous changes in the IPR laws since AI and the metaverse are progressing in the future. One idea worth implementing is the establishment of licensing systems specific to the AI created content with concern to the human authors, developers and investors residuals. Models of this kind would require approaching the rules on traditional authorship in a different way while seeing AI as a force rather than a legal author in an overall sense. This approach ensures that there is much focus on human beings steering AI in the generation of the output such that ownership issues that are already governed by copyrights remain intact.

Similarly, there has been a demand for standardized guidelines in the metaverse due to its decentralized nature of virtual asset ownership. These frameworks should specifically outline rights relating to virtual commodities and services, virtual commodities' ownership, exchange and sale of virtual commodities and services. Here, they grapple with the improved clarity of such rules, which make the approach more accountable and trustworthy to the members of the digital economy. Finally, all these reforms seek to meet the objective of enhancing innovation while at the same time providing ethical and fair protection for all the participants in the ever-growing digital environment.

NAVIGATING THE PATH TO BALANCE

There is a desperate demand towards a path of balance like the blockchain which can protect intellectual property by providing a decentralized, tamper-resistant and open platform for documenting and confirming creative work ownership. Blockchain offers copyright holders

[5] Business Standard, 'Nike Cries Foul over Virtual Shoes, Suing Retailer That Sells Sneaker NFTs' (4 February 2022) <https://www.business-standard.com/article/companies/nike-cries-foul-over-virtual-shoes-suing-retailer-that-sells-sneaker-nfts-122020400190_1.html> accessed 20 March 2025.
[6] Thaler v Commissioner of Patents [2022] FCA 1284 (Aus).

great control over their works, especially for digital creations. It allows the creators to manage and protect their intellectual property worldwide without relying on centralized authorities. With features like smart contracts and immutable ledgers, it creates unquestionable evidence of creation and ownership. It allows for quick and global registration of intellectual property, removing the possibility of unlawful use or disputes. Artists may instantly upload their works to blockchain networks, unlike the Copyright Office registration process, which might take weeks or even months[7].

The advent of AI in the area of patents can also lead to a path of balance as the patent process has been both labour-intensive and time-consuming which requires exhaustive searches of prior art, conscientious drafting and punctilious adherence to legal standards to make sure that the innovations are protected and AI's incorporation into the patent process is regarded as a noteworthy technological upgrade that tackles three critical challenges which are faced by patent professionals today. First, AI's capacity to swiftly discover relevant previous art transforms the early phases of patent submission. AI technologies can swiftly comb through worldwide patent libraries and academic papers to find prior art, dramatically lowering manual search time and enhancing result accuracy. This skill is vital in determining a new invention's originality and non-obviousness, both of which are important patentability requirements. Second, AI's capabilities are expanded to include automated patent writing. Tools that use complex language models and machine learning techniques may automatically create full patent drafts. This reduces the need for drafting and guarantees that technical descriptions and claims are expressed precisely, which is critical for intellectual property protection. Finally, uniformity and compliance with patent applications are critical, particularly when working with numerous patent offices with varying submission criteria and legal requirements. AI systems excel at maintaining consistency throughout all application components, ensuring that each document corresponds to the required legal frameworks, therefore speeding up the review process and lowering the chance of objections based on formalities[8].

There are some ethical considerations that can also help in navigating a path to balance like ensuring inclusivity in accessing the benefits of technology. Inclusive intellectual property policies provide a substantial contribution to reconciling IPR and human rights. Encouraging

[7] Chirag Bhardwaj, 'Importance of Blockchain Intellectual Property Protection' (*Appinventiv*, 2 January 2024) <https://appinventiv.com/blog/blockchain-protecting-intellectual-property/> accessed 20 March 2025.
[8] 'Leveraging AI for More Effective Patent Prosecution Strategies - XLSCOUT' <https://xlscout.ai/leveraging-ai-for-more-effective-patent-prosecution-strategies/> accessed 20 March 2025.

open-source approaches in software development, as well as advocating open access to research and educational materials, stimulates collaborative innovation and corresponds with inclusive ideas. These tactics put an emphasis on information sharing, guaranteeing that the advantages of technology developments are widely available and upholding the right to education[9].

Ethical progress can also be achieved by addressing exploitation, unfair monopolies and cultural appropriation which can help in navigating a path to balance. Exploitation happens when someone benefits from AI at the expense of creators and people who make virtual worlds without paying anything to anyone. The problem is that generative AI always relies on copyrighted material without getting the appropriate legal permissions, which makes human-made work worth less. Similarly, cultural appropriation happens when the metaverse doesn't respect local people's consent and affects them both morally and financially by not giving them a share of using their culture. Unfair monopolies happen when widely used tech platforms organize their business unfairly, taking control of everything on their systems while making it hard for anyone else to compete, and forcing small content creators to opt out of competition. Today's traditional copyright rules aren't working well for determining who controls the work made by AI and how virtual environments affect our cultural history.

To fix these problems, governments need to take action ahead of time, they will have to make sure everyone gets included, and treat competitors fairly. The laws about IP should be made in a way that can fit every culture, sharing ownership of new ideas among all creators, and using the same rules for everyone which will keep everyone on a fair and equal path. Real communication about decisions, combined with good community involvement will help protect our cultural roots and will lead to the right innovation. When we resolve these problems, AI and metaverse technology can grow better while treating everyone equally.

Through its true potential, the metaverse actively creates economic growth that brings advantages to global populations. Future metaverse technologies will innovate through IP

[9] 'Balancing Intellectual Property Rights and Human Rights in the Age of Technology and Innovation' <https://www.livelaw.in/lawschool/articles/intellectual-property-rights-human-rights-technology-and-innovation-252986> accessed 20 March 2025.

alongside foundational intellectual property that maintains economic activity and development stemming from digital transformation[10].

COMPARATIVE PERSPECTIVES AND CASE STUDIES

At the Seventh Session of the WIPO Conversation, which took place on March 29 and 30, 2023, the difficulties the metaverse poses to the existing intellectual property system were discussed, as well as the diverse array of cutting-edge technologies that are making the metaverse possible, such as data processing, blockchain and NFTs, artificial intelligence (AI), emerging AR and VR technologies, the Internet of Things, and the Internet of Things. To ensure that innovation continues to grow and evolve for the good of all, it sought to bring all parties together and provide a roadmap for addressing these challenges.

Several well-known examples of using third-party content about copyright without the proper authorisation or license have been made public. Recent court decisions have shown that IP enforcement in the metaverse is complex. In Hermès v. Mason Rothschild[11], for instance, the issue was Mason Rothschild's development and marketing of MetaBirkin NFTs, which Hermès claimed infringed upon its trademark interests. The main legal issues were trademark infringement, dilution, and cybersquatting. Rothschild's digital artworks, according to Hermès, violated its legally protected intellectual property rights. A Manhattan federal jury found Mason Rothschild guilty on all three charges of trademark infringement, dilution, and cybersquatting on February 8, 2023, in favour of Hermès.

Hermès received a damages award of over $133,000 from the jury. The question of whether Non-Fungible Tokens (NFT) are covered by intellectual property laws was raised by this landmark decision, which established a precedent for businesses wishing to safeguard their trademarks in the metaverse.

Solid Oak Sketches, the copyright owner of many tattoos, represents one of several legal claims staged against 2K Games as developer of the NBA 2K video games. The electronic versions within NBA 2K were accused of copyright violation for replicating geometric designs that

[10] 'The Metaverse and Intellectual Property' <https://www.wipo.int/about-ip/en/frontier_technologies/metaverse-and-ip.html> accessed 20 March 2025.
[11] Hermès International v Mason Rothschild No 22-1755 (2d Cir 2023).

appeared on LeBron James' tattoos along with other basketball players' tattoos according to the claimant.

In the Humvee ruling the court supported the defendant's cause by applying both the implied license defence along with the fair use defence through video game artistic nature and “de minimis use” defense.

As per the 2017 lawsuit between AM General LLC creators of the Humvee military vehicle and Call of Duty video game developers the company claimed licensing infringement for the game's vehicle depiction. According to the United States District Court for the Southern District of New York Activision passed the Rogers test because its focus was on accurately portraying warfare in video games.

However, in certain instances, courts have determined that video game makers have overreached themselves in their exploitation of intellectual property rights belonging to third parties. This implies that each of these problems needs to be looked into separately.

The intricacies and legal obstacles associated with defending intellectual property rights in an uncharted realm will rise in tandem with the expansion of this metaverse bubble. In contrast to the real world, it will be more challenging to accommodate all of the theft and infringement. Since users can create a virtual representation of a real object that they do not own, it will have issues with jurisdiction clarity, owner identification, and intellectual property rights enforcement.[12]

CONCLUSION

Despite the numerous challenges this metaverse faces, it offers unique chances for creativity and engagement in the intellectual property space. With the help of technology, artists and owners of digital rights may reclaim control over their creations and profit from them in previously unheard-of ways. These could include smart contract licensing schemes, blockchain-based IP registries, and decentralised content production platforms.

With the rise of the evolving digital landscape including the rapid progression of Artificial Intelligence (AI) and the metaverse, there are plenty of complex challenges towards balancing

[12] admin, ‘Navigating Intellectual Property Rights in the Metaverse’ (10 June 2024) <https://www.iiprd.com/intellectual-property-rights-in-the-metaverse-navigating-the-virtual-frontier/> accessed 20 March 2025.

innovation with intellectual property rights (IPR) protection. This discussion has highlighted in turn the technological, legal and ethical aspects of gaining this balance. By bringing together the most important ideas discussed here, it's evident that a collaborative and progressive outlook is necessary and the opportunity to both innovate and also to be equitable is imperative.

As AI combined with the metaverse infiltrates every facet of the global economy and society, there are unprecedented opportunities to get creative and to economically expand. But it also unlocks a huge mess of exploitation, cultural appropriation and monopolistic impulses. The cultural resources for creating and distributing complex ideas are used by large corporations with advanced technology to convert the intangibles to their own advantage, which many see as disadvantageous for creators and communities. In addition, traditional IPR frameworks developed for the pre-digital world have difficulty answering questions about who owns AI-generated content, the commodification of cultural heritage and the ethical extraction and use of shared knowledge.

Solutions discussed include updating IPR laws which will consider the challenge presented by the AI and the metaverse while creating an inclusive technological benefit and fair competition. The tools identified to mitigate the risks resulting from monopolistic practices and promote the democratization of technology include proactive governance, open standards, and shared ownership models. For a reimagined framework, cultural sensitivity and equitable compensation mechanisms should also be in place to prevent vulnerable creators and marginalized communities from exploitation.

To build a credible and just online world, we need to find a dynamic balance between supporting creativity and taking care of rights. But this balance is crucial because it directly determines economic equity, cultural preservation, and the viability of the global creative economy in totality. Without such a mechanism in place, we risk repeating the disparities and blunting the diversity and creativity that lead to innovation.

We also must realize that diversity and inclusivity are the roots of innovation itself. Trust, collaboration and long-term growth can be supported by a digital environment that respects intellectual property and cultural integrity. Technology is changing so rapidly that we need to have flexible and adaptive frameworks to evolve with the new developments. The dynamism must be reflected in the policies and practices and technological developments should work as a force for change rather than bring inequality with them.

Given these, for policymakers, technologists, and creators it is critical to engage in forward-thinking collaboration in the development of robust and flexible IPR systems. The emergence of new technologies must be accompanied by a focus on regulatory issues covering the ethical, legal and economic challenges that the emerging technologies present for policymakers. Such frameworks should keep transparency, inclusivity, and fairness always in mind.

On the other hand, creators and communities must be given access to education, advocacy and access to legal resources to empower them to protect their contributions, and cultural assets from enforcement. As driving forces of innovation, corporations and technologists are in a position to endorse ethical practices followed by the adoption of platforms and systems that protect intellectual property and understand cultural integrity.

We will have to move forward by speaking openly and cooperating with the international community. In order to solve the challenges these technologies bring; solutions need to exist beyond national borders. Both the World Intellectual Property Organization (WIPO) and other international bodies need to lead the way in manoeuvring towards harmonizing IPR standards across jurisdictions, and fostering cooperation in order to create such benefits.

Ultimately it is up to us to make the digital ecosystem that obeys the creator's rights, aware of the diversity of cultures and with equitable access to technological advancement. Stakeholders can together make the digital revolution an engine for shared prosperity, and one for cultural enrichment, as the digital future becomes less closed and more open, more inclusive and more ethical.