

# EXPLORING INTELLECTUAL PROPERTY RIGHTS IN THE METaverse: NAVIGATING THE LEGAL LANDSCAPE OF VIRTUAL WORLDS

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## Abstract

*The burgeoning realm of the Metaverse has ignited a pressing need for an in-depth exploration of its intricate relationship with Intellectual Property (IP) rights. This paper embarks on a comprehensive journey through the Metaverse's intellectual property landscape, mirroring the urgency and significance of addressing human rights in conflict scenarios. Within this dynamic digital frontier, a rich array of IP types, Copyright, Trademarks, Patents, and Trade Secrets, unfolds, each with its unique applications and implications. In tandem, we delve into the international and national IP laws that govern the Metaverse, navigating the complex terrain of enforcement challenges and jurisdictional intricacies. The protection of creators and users in this virtual realm is a central concern, echoing the imperative need to safeguard basic freedoms and human rights. The exploration extends to ownership complexities, licensing dynamics, and effective dispute resolution mechanisms, striking a delicate balance between IP protection and user empowerment. Just as lessons are drawn from case studies and legal precedents in conflict contexts, we glean insights from notable IP-related cases within the Metaverse. These real-world narratives offer guidance for navigating the evolving legal landscape. In conclusion, the Metaverse's exponential growth demands a holistic understanding of its IP landscape. This paper underscores the paramount importance of IP protection within this digital frontier, urging adaptive legal frameworks, interdisciplinary collaboration, and responsible stewardship to navigate the evolving Metaverse-IP nexus.*

**Keywords:** IPR, IP, Metaverse, Virtual Reality (VR), Online Gaming, Augmented Reality (AR), Copyright.

## 1. Introduction

The concept of the Metaverse is deeply rooted in science fiction and digital culture. It represents a collective virtual shared space that combines aspects of augmented reality (AR), virtual reality (VR), online gaming, social networking, and immersive

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digital environments.<sup>1</sup> The Metaverse is envisioned as a fully immersive and interconnected digital universe where users can interact, socialise, create, and transact within a synthetic digital reality. The term “Metaverse” was popularised by Neal Stephenson’s 1992 science fiction novel “Snow Crash” and has since been explored and expanded upon in various forms.<sup>2</sup>

The significance of the Metaverse in the context of Intellectual Property Rights becomes increasingly apparent as technology continues to advance. Here’s why:

- i. *Explosive Growth of Virtual Environments*: With the advent of advanced VR and AR, technologies, online gaming, and social VR platforms, virtual environments have witnessed unprecedented growth. Users now spend significant time in these digital spaces, creating and consuming content, including virtual assets, digital art, music, and more.<sup>3</sup>
- ii. *Virtual Economy*: The Metaverse has given rise to a thriving virtual economy, with real-world money being exchanged for virtual goods and services. This economic dimension adds a layer of complexity to intellectual property concerns, as creators seek to protect their digital creations and earn income from them.<sup>4</sup>
- iii. *User-Created Content*: In the Metaverse, users often have the ability to create and customise digital content, from avatars to virtual homes and virtual clothing. This user-generated content raises questions about ownership, licensing, and copyright.<sup>5</sup>
- iv. *Interconnectedness*: The Metaverse is designed to be a seamless, interconnected digital universe. This interconnectedness can lead to

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<sup>1</sup> Robert V. Kozinets, “Immersive Netnography: A Novel Method for Service Experience Research in Virtual Reality, Augmented Reality and Metaverse Contexts” 34(1) *Journal of Service Management* 5 (2022).

<sup>2</sup> Judy Joshua, “Information Bodies: Computational Anxiety in Neal Stephenson’s Snow Crash”, 19(1) *Interdisciplinary Literary Studies* 17 (2017).

<sup>3</sup> Subro Santiranjana Thakur, Soma Bandyopadhyay, *et.al.*, “The Metaverse as a Virtual Form of Smart Cities: Opportunities and Challenges”, 185(17) *International Journal of Computer Applications* 45 (2023).

<sup>4</sup> Simon Bradshaw, Adrian Bowyer, *et.al.*, “The Intellectual Property Implications of Low-Cost 3D Printing”, 7(1) *Scripted* 5 (2010).

<sup>5</sup> Daniel Gervais, “The Tangled Web of UGC: Making Copyright Sense of User-generated Content”, 11(4) *Vanderbilt Journal of Entertainment and Technology Law* 841 (2021).

content and assets created in one virtual world being shared or used in others, raising issues of jurisdiction and legal enforcement.<sup>6</sup>

- v. *Identity and Branding*: Individuals and businesses establish digital identities and branding within the Metaverse. Protecting these identities and brands from infringement and misuse is essential.<sup>7</sup>
- vi. *Emerging Legal Challenges*: The Metaverse presents novel legal challenges, such as defining and enforcing Intellectual Property Rights (IPR) for digital assets, addressing virtual property disputes, and establishing frameworks for cross-platform interactions.<sup>8</sup>

## 2. Intellectual Property in the Metaverse

### 2.1. Copyright

Copyright is a fundamental form of Intellectual Property that protects original creative works fixed in a tangible medium. In the Metaverse, copyright applies to a wide range of digital content, including:

- *Virtual Artwork*: Users and artists create digital paintings, sculptures, and other forms of art within virtual environments. These creations are protected by copyright law, and their reproduction or distribution without permission constitutes infringement.<sup>9</sup>
- *Virtual Music*: Musicians and composers produce original music for in-game soundtracks or virtual concerts. Copyright safeguards their compositions and performances, requiring licenses for their use beyond the Metaverse.<sup>10</sup>
- *Written Content*: Virtual worlds often include narratives, stories, and dialogues. The text, scripts, and literary works are also protected by copyright.

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<sup>6</sup> Yogesh K. Dwivedi, Laurie Hughes, *et.al.*, “Metaverse Beyond the Hype: Multidisciplinary Perspectives on Emerging Challenges, Opportunities, and Agenda for Research, Practice and Policy”, 66(C) *International Journal of Information Management* 2 (2022).

<sup>7</sup> *Id.* at 3.

<sup>8</sup> *Ibid.*

<sup>9</sup> Todd David Marcus, “Fostering Creativity in Virtual Worlds: Easing the Restrictiveness of Copyright for User-Created Content”, 52(1) *NYLS Law Review* 68 (2007).

<sup>10</sup> William Cheng, “Role-Playing Toward a Virtual Musical Democracy in *The Lord of the Rings Online*”, 56(1) *Ethnomusicology* 40 (2012).

## 2.2. Trademarks

Trademarks are essential for establishing and protecting brand identities within the Metaverse. Here's how they are relevant:

- *Virtual Branding*: Companies, organisations, and individuals create virtual brands and logos for their avatars, businesses, or products. Registering these trademarks prevents others from using similar marks, ensuring brand authenticity and trust.<sup>11</sup>
- *In-Game Products*: Virtual marketplaces within games and virtual worlds host a wide array of virtual goods. Trademarks help distinguish genuine products from counterfeit or imitative ones, preventing consumer confusion.<sup>12</sup>

## 2.3. Patents

While less common in virtual environments, patents can apply to specific technologies, innovations, or processes within the Metaverse:

- *Virtual Reality Technology*: Innovations in virtual reality hardware, software, and user interfaces may be patented.<sup>13</sup> For example, a unique motion-sensing technology used for avatar control or virtual environment navigation could be patented.
- *AI Algorithms*: Patents may apply to AI algorithms used to generate virtual content, such as procedurally generated landscapes or dynamic NPC behaviours.<sup>14</sup>

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<sup>11</sup> Alina Wheeler, *Designing Brand Identity: An Essential Guide for the Whole Branding Team* 93 (John Wiley & Sons, New Jersey, 5<sup>th</sup> edn. 2009).

<sup>12</sup> *Supra* note 6 at 21.

<sup>13</sup> Fabio Vinicius Freitas, Marcus Vinicius Mendes Gomes, *et.al.*, “Benefits and Challenges of Virtual-Reality-Based Industrial Usability Testing and Design Reviews: A Patents Landscape and Literature Review”, 12(3) *Applied Sciences* (2022), available at: <https://www.mdpi.com/2076-3417/12/3/1755> (last visited on May 20, 2024).

<sup>14</sup> Andrew Rapacke, “Patenting AI Algorithms: Understanding the Challenges and Opportunities”, available at: <https://arapackelaw.com/patents/patenting-ai-algorithms/> (last visited on May 20, 2024).

## 2.4. Trade Secrets

Trade secrets protect confidential business information that provides a competitive advantage. In the Metaverse, trade secrets can be crucial for:<sup>15</sup>

- *Virtual Business Models*: Companies may have proprietary information about their virtual economy, pricing strategies, or user acquisition methods that give them an edge. Protecting these trade secrets is vital for maintaining a competitive edge.
- *Virtual Asset Creation Processes*: Game studios, for instance, may have proprietary methods for creating high-quality virtual assets efficiently. These processes are considered trade secrets and contribute to the studio's success.

Thus, rapid growth and economic activity within the Metaverse make robust Intellectual Property (IP) protection essential. Creators and businesses invest substantial resources in developing virtual assets, experiences, and brands, making it crucial to establish clear IP frameworks. These frameworks ensure fair compensation by allowing creators to monetise their work through licensing agreements, virtual asset sales, or the monetisation of experiences. Additionally, strong IP protection fosters innovation, encouraging creators to invest time and resources into developing unique and high-quality content. Trademarks and copyrights safeguard brand integrity, helping to prevent counterfeit goods or services and maintaining trust and authenticity in the virtual world. Moreover, these protections provide legal recourse in cases of IP infringement, enabling creators and businesses to defend their rights, seek damages, or enforce licensing agreements.

## 3. Application of Intellectual Property in Virtual Environments

In virtual environments, including the Metaverse, the application of IP is multifaceted and crucial for maintaining order, encouraging creativity, and protecting the rights of creators and innovators. Here is a more detailed exploration of how IP is applied:

- *Ownership and Licensing*: In the Metaverse, users and creators produce a vast array of digital content, ranging from virtual clothing and accessories to 3D

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<sup>15</sup> Pinsent Masons, "What does the Metaverse mean for Intellectual Property Rights?", available at: <https://www.techuk.org/resource/what-does-the-metaverse-mean-for-intellectual-property-rights.html> (last visited on May 21, 2024).

models and music.<sup>16</sup> Clear guidelines are essential to determine the ownership of these virtual assets and establish licensing agreements. For example, when a user generates a unique 3D model for use in a virtual world, they need to understand whether they retain the copyright to that model or if the platform has any claims to it. Licensing terms dictate how these assets can be used, shared, or monetised, and they vary from platform to platform.

- *Enforcement and Protection:* Effective enforcement mechanisms are critical for safeguarding IP rights in the Metaverse. Virtual environments often employ reporting systems to address IP violations promptly. Creators and businesses should have access to efficient reporting mechanisms to protect their creations from unauthorised use, reproduction, or distribution.<sup>17</sup> Legal recourse is also available when IP rights are infringed upon, reinforcing the importance of established legal frameworks for virtual environments.
- *Virtual Economy:* The Metaverse operates as a dynamic virtual economy where real-world currencies are exchanged for virtual goods and services. IP laws help determine the rights and responsibilities of users, creators, and platform operators within this economy. Clear guidelines are essential for buying, selling, and trading virtual assets.<sup>18</sup> For instance, a user selling virtual clothing designs should understand the IP implications of those sales, including licensing agreements, royalties, and taxation.
- *Interoperability:* The Metaverse's interconnected nature allows virtual assets to move between different platforms and virtual worlds seamlessly. This raises questions about how IP rights and licensing agreements apply in a cross-platform and cross-world context. Clear legal standards must be established to address these complex scenarios, ensuring that creators' rights are respected, even when their virtual assets traverse different digital spaces.

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<sup>16</sup> *Supra* note 6.

<sup>17</sup> Adel Salem Allouzi and Khaled Mohammad Alomari, "Adequate Legal Rules in Settling Metaverse Disputes: Hybrid Legal Framework for Metaverse Dispute Resolution (HLFMDR)", 7 *International Journal of Data and Network Science* 1627 (2023).

<sup>18</sup> Seyed Mojtaba Hosseini Bamakan, Nasim Nezhadsistani, *et.al.*, "Patents and Intellectual Property Assets as Non-Fungible Tokens; Key Technologies and Challenges", 12(2178) *Scientific Reports* 2178 (2022).

#### 4. International and National IP Laws in the Metaverse

In the context of the Metaverse, it is essential to evaluate how existing international and national IP laws apply and adapt to this evolving digital landscape. IPRs are protected by various international agreements and conventions, such as the Berne Convention for the Protection of Literary and Artistic Works and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).<sup>19</sup> These agreements establish foundational principles for copyright, trademark, and patent protection. However, their application in the Metaverse raises questions about cross-border IP disputes, harmonisation of laws, and the need for global standards to govern virtual assets and transactions. Every country has its own set of IP laws, which can vary significantly in terms of scope, duration, and enforcement mechanisms. In the Metaverse, where users and creators often span multiple jurisdictions, the interplay between national IP laws and the need for harmonisation poses challenges. National laws may need to adapt to accommodate virtual assets, user-generated content, and cross-platform transactions.<sup>20</sup>

In the United States, the Digital Millennium Copyright Act (DMCA) addresses copyright issues in the digital realm. Understanding how this law applies to user-generated content and IP infringement within virtual worlds is crucial. Other countries have similar legislation. Analysing their applicability and limitations within the Metaverse is essential.<sup>21</sup>

##### 4.1. Enforcement Challenges and Jurisdictional Issues

Enforcing IPR within the Metaverse presents unique challenges:

- *Cross-Border Enforcement*: Virtual worlds and platforms often have users and creators from all over the world. Determining which country's laws apply and how to enforce IP rights when they are violated by users or entities in

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<sup>19</sup> Lawrence R. Helfer, "Human Rights and Intellectual Property: Conflict or Coexistence?", 5(1) *Minnesota Intellectual Property Review* 50 (2003).

<sup>20</sup> Andy Ramos, "The Metaverse, NFTs and IP rights: to regulate or not to regulate?", available at: [https://www.wipo.int/wipo\\_magazine/en/2022/02/article\\_0002.html](https://www.wipo.int/wipo_magazine/en/2022/02/article_0002.html) (last visited on May 30, 2024).

<sup>21</sup> Neha Ahuja, "Commercial Creations: The Role of End User License Agreements in Controlling the Exploitation of User Generated Content", 16 *The John Marshall Review of Intellectual Property Law* 383 (2017).

different jurisdictions can be complex.<sup>22</sup> International cooperation and agreements on enforcement are necessary.

- *Platform Responsibility*: Platforms hosting virtual environments face challenges in monitoring and enforcing IP rights. They must strike a balance between protecting creators' rights and maintaining a user-friendly environment. Developing effective reporting and takedown procedures while respecting due process is a challenge.<sup>23</sup>
- *Jurisdictional Clashes*: Conflicts can arise when multiple countries claim jurisdiction over an IP dispute in the Metaverse. Clear legal frameworks are needed to resolve jurisdictional clashes and determine the proper forum for dispute resolution.<sup>24</sup>
- *Digital Enforcement Tools*: Advanced technologies, such as blockchain and AI, are being explored for IP enforcement within virtual environments. The effectiveness and ethical implications of these tools in the Metaverse are subjects of debate and require careful consideration.<sup>25</sup>

## 5. 'Protecting Creators and Users' and 'Virtual Economies and IP'

### 5.1. Strategies for Creators to Protect their IP in Virtual Worlds

In virtual worlds, creators face unique challenges when it comes to protecting their IP. Strategies for safeguarding IP include:

- *Platform Policies*: Creators should thoroughly review the terms of service and policies of the virtual world or platform they use. Understanding these policies is crucial, as they often outline how IP rights are protected and the extent to which the platform retains rights to user-generated content.<sup>26</sup>
- *Copyright and Trademark Registration*: Registering copyrights for original works, such as virtual art, music, or literature, offers creators stronger legal protection. Trademarks can be registered for virtual brands and logos. These

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<sup>22</sup> Maria Kalyvaki, "Navigating the Metaverse Business and Legal Challenges: Intellectual Property, Privacy and Jurisdiction", 3(1) *Journal of Metaverse* 87 (2023).

<sup>23</sup> *Ibid.*

<sup>24</sup> *Supra* note 22.

<sup>25</sup> *Supra* note 20.

<sup>26</sup> Greg Lastowka, "User-Generated Content and Virtual Worlds", 10(4) *Vanderbilt Journal of Entertainment & Technology Law* 912 (2008).



registrations provide indisputable evidence of ownership and serve as a powerful deterrent against infringement.

- *Use of Watermarks and Metadata:* Creators can embed watermarks or metadata into their digital assets, such as images or 3D models. These digital signatures indicate ownership and copyright information, serving as a visible reminder to users that the content is protected.
- *Licensing Agreements:* When creators share their content with others, they can utilise licensing agreements. These contracts define how their work can be used, by whom, and under what conditions. Licensing agreements are versatile tools that can grant specific permissions and protections to users while preserving the creator's rights.
- *IP Enforcement Mechanisms:* Virtual platforms should provide effective mechanisms for reporting IP infringement. Creators can use these tools to report unauthorised use of their content, leading to takedowns or other remedial actions. Understanding how these mechanisms work is essential for creators seeking to protect their IP.

## 5.2. User-Generated Content: Ownership, Licensing, and Disputes

User-generated content (UGC) is central to the vibrancy of virtual worlds but raises important questions regarding ownership, licensing, and disputes:

- *Ownership Complexity:* Ownership of UGC can be complex. While creators generate this content, virtual world platforms often have terms of service that retain some rights. Creators must understand these terms and conditions to ascertain the extent of their ownership.
- *Licensing:* Many virtual platforms allow users to license their UGC, often within the platform's ecosystem. Creators should understand the implications of these licenses, which may determine how others can use and modify their content. Some licenses may even enable commercialisation within the virtual world's marketplace.<sup>27</sup>

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<sup>27</sup> Mitra Barun Sarkar, Brian Butler, *et.al.*, "Intermediaries and Cybermediaries: A Continuing Role for Mediating Players in the Electronic Marketplace" 1(3) *Journal of Computer-mediated Communication*

- *Resolution of Disputes*: Disputes can arise when users debate ownership or usage rights of UGC. It is essential for virtual platforms to provide clear mechanisms for dispute resolution. Such mechanisms may involve reviewing licensing agreements, platform policies, and user interactions to ensure equitable outcomes.
- *Educating Users*: Virtual platforms have a responsibility to educate users about UGC ownership and licensing. Clear guidelines and instructions help users understand their rights and responsibilities, minimising conflicts and promoting a respectful atmosphere.

### 5. 3. Implications for Future Legal Decisions

In 2018 and 2019, several individuals and celebrities, including rapper Milly and actor Alfonso Ribeiro, filed lawsuits against Epic Games, the creator of Fortnite. They claimed that the game's "emotes" (in-game dance moves) were direct copies of their signature dance moves and therefore infringed upon their copyrights.<sup>28</sup> These cases raised questions about the use of real-world dance moves as digital items in virtual worlds. Disputes over virtual real estate ownership have surfaced in virtual worlds like 'Decentral' and 'The Sandbox'.<sup>29</sup> These cases have explored questions of property rights and the ownership of virtual land, buildings, and assets, which can have significant IP implications.

As virtual commerce and marketplaces within the Metaverse have grown, trademark disputes have become more common. Instances of businesses using well-known real-world trademarks within virtual environments have led to legal actions, highlighting the need for trademark protection in the Metaverse. User-generated content platforms within virtual worlds have faced copyright-related issues. Some creators have been accused of using copyrighted material without permission, while platforms have had

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(1995), available at: <https://www.uky.edu/~bsstil0/oldclass/390-001/articles/cintermed/sarkar.html> (last visited on June 03, 2024).

<sup>28</sup> Sharona Sternberg, "The Fortnite Lawsuits: A Dance Battle Royale against Copyright Law's Protections of Choreographic Works", available at: <https://www.jdsupra.com/legalnews/dance-fortnite-and-the-epic-battle-for-2009534/> (last visited on June 03, 2024).

<sup>29</sup> Paul R. Messinger, Eleni Stroulia, *et.al.*, "Virtual Worlds - past, present and future: New directions in Social Computing", 47(3) *Decision Support Systems* 204 (2009).

to implement measures to address these challenges, such as content takedowns and DMCA notices.<sup>30</sup>

The use of blockchain technology to create and track ownership of virtual assets has raised questions about the intersection of blockchain technology, smart contracts, and IP rights. Some cases have explored the legal recognition of blockchain-based ownership of virtual goods. As virtual fashion brands have emerged, discussions on trademark protection within virtual environments have gained prominence.<sup>31</sup> These cases often revolve around the use of virtual brand names, logos, and designs, and how real-world trademark laws apply.

### 6. The Evolving Landscape of IP in the Metaverse

The Metaverse represents a paradigm shift in how we create, consume, and protect intellectual property. It blurs the lines between the physical and digital worlds, challenging traditional IP norms and requiring innovative solutions. Key facets of this evolving landscape include:

- *Ownership and Licensing*: Determining ownership and licensing of virtual assets, including virtual real estate, digital art, and in-game items, remains a central challenge. Clear and adaptable licensing models are necessary.
- *Cross-Border Complexity*: The global nature of the Metaverse complicates cross-border IP enforcement. Establishing international standards and cooperation mechanisms is imperative.
- *Blockchain and Provenance*: The use of blockchain technology for tracking ownership and provenance of virtual assets is gaining traction. This technology has the potential to revolutionise IP protection within the Metaverse.<sup>32</sup>
- *User Empowerment*: Empowering users to understand and protect their IP rights is essential. Education and user-friendly tools for reporting and resolving IP disputes are vital components of user empowerment.

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<sup>30</sup> *Supra* note 5.

<sup>31</sup> *Supra* note 29.

<sup>32</sup> *Ibid.*

- *Virtual Economies*: The Metaverse has given rise to robust virtual economies with real-world implications. IP protection within these economies affects creators, users, and businesses alike.

### 6.1. Future Research Directions and Innovative Approaches

As the Metaverse continues to evolve, there is a pressing need for further research and the development of innovative solutions to address the multifaceted challenges of IP protection. Collaborative efforts among legal scholars, technologists, ethicists, and industry stakeholders are crucial for developing comprehensive solutions that consider legal, ethical, and technological aspects.<sup>33</sup> Policymakers should work in conjunction with industry experts to craft adaptive legal frameworks that protect IP rights while fostering innovation and creativity in virtual environments. Raising awareness and providing educational resources on IP rights and responsibilities within the Metaverse will empower users, creators, and businesses to navigate this digital landscape effectively. The development of ethical guidelines and best practices can help ensure responsible behaviour and inclusive participation in the Metaverse.<sup>34</sup>

## 7. Conclusion

In conclusion, the exploration of IPR in the Metaverse reveals a landscape teeming with complexity and opportunity. As this digital frontier evolves, it challenges traditional IP norms and demands innovative solutions that balance protection with fostering creativity and user empowerment. Key insights underscore the necessity for adaptive legal frameworks that accommodate the unique dynamics of virtual environments. The intersection of technology, such as blockchain and AI, with IP law offers promising avenues for enhancing ownership tracking and enforcement mechanisms. Moreover, the global nature of the Metaverse necessitates international cooperation to resolve cross-border IP disputes effectively. Ethical considerations loom large in shaping responsible behaviour and inclusivity within this burgeoning digital

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<sup>33</sup> Daniel Greene, Anna Lauren Hoffmann, *et.al.*, “Better, Nicer, Clearer, Fairer: A Critical Assessment of the Movement for Ethical Artificial Intelligence and Machine Learning”, *Proceedings of the 52nd Hawaii International Conference on System Sciences* 2122 (2019).

<sup>34</sup> Mohd. Naved, and Aditya Kumar Gupta, “Metaverse as a Tool for the Achievement of SGDs: Challenges, Opportunities, and Applications”, *How the Metaverse Will Reshape Business and Sustainability* 105 (2023).

realm. Clear guidelines and educational initiatives are crucial for empowering users, creators, and businesses to navigate IP rights with confidence and integrity.

Looking forward, interdisciplinary collaboration among legal experts, technologists, ethicists, and policymakers will be essential in developing holistic solutions. These solutions must not only protect intellectual property but also foster a vibrant ecosystem that encourages innovation and respects the rights of all participants. In essence, the Metaverse represents a paradigm shift in how we conceive, create, and safeguard intellectual property. By embracing these challenges proactively and collaboratively, we can pave the way for a future where