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USE OF TRADEMARK IN METAVERSE

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TRADEMARK USE, INFRINGEMENT AND ENFORCEMENT IN THE METAVERSE

Nature of Trademark Use in Virtual Worlds

Trademark law in classical formulation is intended to regulate the use of signs that make immune in the marketplace as an indication of commercial origin and it also aims to defend the goodwill that is created for this sign through constant quality and consumer association. Virtual worlds and metaverse environments recreate the conditions necessary for a marketplace (buyers & sellers, product differentiation, advertising, transactional exchange & reputational competition) however, they do so through the use of technologically mediated and immersive modes. As a result, investigation of the "use" of a trademark in the context of virtual worlds must ask not just what value a trademark marker has as a visual representation but rather what is functional in the sense of being commercially important in an environment where goods and services can be intangible, avatar-based and tokenized⁹⁷⁰.

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⁹⁷⁰ Joshua Fairfield, "Tokenized: The Law of Non-Fungible Tokens and Next Generation Digital Property," *Southern California Law Review* 95 (2022).

In virtual worlds, the typical representation of trademarks are in three types of connected use. First, there is identity use, where the mark is used as a signifier of the presence or affiliation of the proprietor's virtual presence within the virtual environment. This includes branded virtual storefronts, official brand venues, virtual events spaces and immersive experiences. Here, the trademark functions in a similar way to signage in a physical marketplace: It is a signal for users that the virtual space is official operated, licensed or endorsed by the trademark proprietor. Second, there is product use, where trademarks are used on virtual products, such as avatars, avatars clothing, avatars accessories, digital collectibles, and branded functional items that can be used within the virtual world. In this context, the mark can be said to serve the classical origin-indicating function, that is, help consumers to identify the virtual good with a specific commercial source. Third, there is promotional use, in which the trademark is used in advertising, sponsorship and experiential marketing in the virtual world. Such use may include virtual billboards, sponsored events, creator collaborations and branded gamified experiences that encourage consumer engagement and loyalty.

A unique characteristic of the use of trademarks in virtual worlds is the mode of consumer interaction, which is experiential in nature. In traditional commerce, consumers will have made a judgment of a mark at the point of sale through packaging, labels, or advertisements. In the metaverse the consumer's relationship with a trademark can happen through immersion, participation, and performance of identity. The mark may be encountered not as a static mark but as an element within an environment that incorporates different sensory elements. This creates a greater potential of association-based confusion, where users need not necessarily believe that a product is made by the trademark owner, but may believe that it is officially licensed, sponsored or affiliated. Consequently, the legal analysis must go

beyond narrow source confusion and recognize the wider range of confusion known to modern trademark law, including confusion as to sponsorship, authorization and endorsement.

Virtual worlds also create complexities regarding the threshold for "use in the course of trade." In many metaverse environments, users can craft and trade goods and craft virtual goods, and sell them in platform marketplaces. The distinction between this type of creation by hobbyists and commercial exploitation could therefore become blurred. A user who creates a virtual item that bears a famous mark might claim creative expression or fan activity, however where these items are offered for sale, traded for value or being advertised via the economic systems of the platform, this use becomes commercial in its nature. The legal importance of this difference is significant, because trademark infringement usually made is rooted in commercial use that affects the market and amount of the mark's goodwill.

Furthermore, the architecture of the metaverse raises the typical visibility, and therefore replication risk of trademark. Virtual goods are often easy to copy, adapt and redistribute. Even where restrictions are placed by platforms, the tools of user generated content may allow for reproduction of marks and trade dress. This phenomenon is comparable to the phenomenon of digital piracy, however, different in terms of commercial implications because virtual goods have potential status-based value on the market and they can be traded as scarce assets. The ability to produce branded goods at mass production levels can lead to dilution, tarnishment, and lack of control over the brand identity. In addition, many use cases for the metaverse also involve interoperability, where goods and identities can be transferred between platforms. This movement makes it difficult for trademark owners to exercise control over the appearance and functionality of their marks in the variety of digital ecosystems.

Accordingly, describing the nature of trademark use in virtual worlds needs to be rethought in terms of a spectrum of commercial signification: at one end the use of brands as a presence for commerce and in experiential marketing and at the other end the identification of brands at the product level and tokenized ownership of products. Each form of use involves fundamental trade mark issues – reliability, trust, goodwill and market integrity – but requires doctrinal sensitivity to immersion in context and to commerce mediated by a computer.

NFT-based Trademark Exploitation

Non-fungible tokens (NFTs) have added a new and complicated scheme of trademark exploitation—one which links digital scarcity, tokenized provenance, and market speculation in blockchain-based ecosystems and structures. NFTs are often defined as unique digital tokens that are recorded on a blockchain which can be tied to a piece of digital content or an access right, membership right or authentication claim. While the token itself is separate from the ultimate content, market place function usually relates to NFTs as the commercial manifestation of the (associated) digital asset. This commercial reality has important implications in the area of trademark law, especially where NFTs make use of or reference trademarks.

NFT-based exploitation of trademark usually takes several forms. The first is the unauthorised tokenization of branded imagery, where a party mints NFTs with a trademark or trade dress of a well-known brand, therefore creating the false impression of association. This may include direct replication of logos, brand names or unique packaging designs. Such use can confuse consumers into thinking that the trademark proprietor has authorized the NFT collection, especially when the brand exists in the digital fashion, gaming or collectibles space. The second pattern is branding of NFT as "virtual goods" in direct competition with official brand offers. This involves the trade of minting

digital collectibles or virtual wearables using trademarks so that virtual substitutes can be created that will trade upon the mark's goodwill. The third pattern is deceitful metadata and market place tags, which is the use of a trademark in the titles, descriptions, search tags, or promotional posts of NFTs, to attract the attention of consumers and traffic. Even where the NFT image does not overtly carry the mark, such usage on metadata grounds can create initial confusion of interest and unfairly divert consumers.

A unique theological problem with NFTs is the blurring between commercial branding and content of expression. NFT collections are sometimes it's claimed art commentary or art about, especially if they make reference to luxury brands or cultural symbols. In such cases the courts and scholars debate whether or not trademark law should be constrained so as not to cripple legitimate artistic speech. However, the fact that direct commercial sale and speculative pricing and marketing based on interception of brand recognition are often found in its use gains support toward seven for the view that such use is exploitation rather than expression. The legal challenge in this area is to know where to draw the line between protected artistic reference and commercial misleading appropriation⁹⁷¹.

NFTs also increase dangers of dilution and tarnishing. Even if the issue of consumer confusion is challenged, repeated use of a famous trademark in unauthorized NFT collections can dilute what model legal scholars have described as the "distinctiveness" of the trademark by bringing uncontrolled digital assets to the brands' name. Additionally, NFT markets have been linked to fraud, "rug pulls" and volatile speculation. When such unauthorized use of a famous trademark occurs, the brand owner can suffer in terms of their reputation and can lose their grip on their brand image. Therefore, the damage is not only

⁹⁷¹ A. Didenko, "Trade Mark Dilemmas in the Metaverse: Interplay between Stakeholders," *Journal of Intellectual Property Law & Practice*, ahead of print, 2024, <https://doi.org/10.1093/jiplp/jpae118>.

on consumer deception but on brand integrity, goodwill preservation.

Moreover, NFTs add difficulty in enforcement because they have decentralization and pseudonymy. Although the marketplaces can exclude infringing NFTs from their marketplaces, the tokens may still be present on the blockchain and may have been traded through other means. The identification of the minter may not be easy because of pseudonymous wallet addresses and cross border operations. Enforcement thus becomes dependent off a mixture of legal action, platform governance and technical mechanisms. This dependence compounds the importance of requirements regarding intermediary responsibility and cooperation procedures to complied with this ordinance.

In addition, exploitation of an NFT raises classification issues: is an NFT a "good", a "service", a digital certificate or a contractual entitlement? In a trademark sense, this classification has an impact in the registration strategy and for the infringement analysis. Brands have been especially looking to register trademarks for downloadable virtual goods and NFT-based services to anticipate that tokenized goods are expected to be a new category of commerce. This is a trend that suggests a realization that trademark protection must be extended to cover the tokenized marketplace and the associated digital goods economy.

In conclusion, NFT-based exploitation of trademark is an extremely complex intersection of branding, digital scarcity, claims to expression and decentralized commerce. It facilitates novel types of wholly unauthorized use that could confuse consumers, dilute well-known marks and destroy goodwill - while at the same time accommodating technological defaults which can confound enforcement. A coherent legal response must therefore seek to address the challenge of both doctrinal interpretation of trademark use, and practical mechanisms for enforcing it in blockchain-driven markets.

Virtual Goods and Brand Replication Issues

Virtual goods are one of the most important features that are commercially important of metaverse ecosystems. They consist of avatar wearables, accessories, skins, virtual tools, digital collectibles, and virtual real estate decor, and other things that users can own, showcase, and trade that are embodied by a digital representation of a thing. Although non-physical, these goods pay work as commodities in structured marketplaces, often denominated in fiat-equivalent currencies or crypto-assets, and also usually linked to status, identity and social signaling. From a trademark perspective, the key question from a legal perspective is if virtual goods replicate the basic competitive conditions in which trademarks operate, that is, that they circulate in commerce, are distinguished by a brand identity, and affect consumer choice. Consequently, illegal replication of branded virtual goods increase the classical harms from trademark related to confusion, misrepresentation and dilution as well as adding other distinctive complexities based on the technology architecture and user generated models of creation.

Brand replication occurring in virtual goods is often accomplished in three ways. First, there is direct duplication, where a trademark or logo is copied onto a virtual product (e.g. a digital sneaker, handbag or jacket for avatars) in a way that is indistinguishable from an officially authorized copy. This is the most simple form of virtual counterfeiting, which is extremely similar to the physical counterfeit goods. Second, there is also trade dress imitation, which involves the imitation of the overall appearance, design language, colour combinations, patterns or distinctive aesthetic features associated with the brand without expressly using the word mark. Such replication can still cause confusion given that virtual consumers tend to use visual and stylistic cues instead of a text-based labeling system. Third, there is association-based replication, whereby a virtual product is marketed or described using the brand name, tag or metadata, so that the brand-name or

logo creates the perception that it has been endorsed even if the brand name or logo is not prominently displayed⁹⁷².

A unique issue in metaverse situations involves the blurring of the boundary of the degrees of consumer customization to commercial exploitation. Virtual worlds often include easy-to-use design tools that enable users to create things for themselves, or to share with others in communities. This creative culture is core to the growth of metaverse, but this also increases the growth space for infringing behavior. When bootleg virtual items created by others that carry someone's trademark are sold, traded, advertised, the user it is a commercial replacement that is not authorized to sell and use by law and can macropage calculation of the good will of the trademark holder. The important legal question is to work out when such acts go over the edge into "use in the course of trade" and thus become actionable infringement or passing off. The existence of monetary exchange, the inclusion on a marketplace, promotional activity, and the regularity of distributing a product for commercial purposes are usually indicative of commercial use of the product, while purely private, non-commercial experimentation may have some other evaluative considerations.

Virtual goods also exacerbate the threat of brand dilution. Even where consumers appreciate that an item is unofficial, the high circulation of unlicensed branded virtual goods may erode the distinctiveness of the trademark because it normalizes unauthorized use. In metaverse environments, in which visual branding is pervasive and copyable at scale and speed not typically seen in physical marketplaces, dilution may materialise on a scale and with a speed that is not typically seen. Furthermore, uncontrolled replication could create tarnishing, specifically where the branded virtual goods exist in an include that is not in keeping with the currently branded

image, such as virtual spaces connected with explicit content, violent themes, or counterfeit marketplaces.

The enforcement issue is made more difficult by the ease with which the technology is replicated and distributed. Digital files can in many cases be copied, altered, and redistributed easily and without any real friction. Even in instances where the platforms have content moderation, the infringing content can resurface under different names or using different user accounts. Additionally, governance ambitions that include interoperability (where virtual items can be used on platforms about each other), may compromise centralized enforcement, as the goods created in one environment may start migrating to another not overseen by the same legal landscape. This creates a structural enforcement gap: while trademark owners might get successful in taking content down from one hardcore platform, they still stay at risk to replicate content at decentralized or alternative platforms.

Therefore, the issues of virtual goods and brand replication in the metaverse need to be addressed as a technologically magnified version of the harms of trademark. To which requires some doctrinal clarity about commercial use, consumer confusion in immersive spaces, and some sort of proportion between legitimate creativity and unauthorized commercial appropriation.

Domain Names, Avatars and Digital Identity Misappropriation

In the metaverse ecosystems the concept of identity is both a social tool and an economical asset. Users identify using avatars, digital profile, usernames, handles, wallet addresses and persistent identity markers that together function all as mechanisms of recognition, trust and reputation. For trademark law, this identity infrastructure makes this a new locus of potential misuse. Traditional trademark disputes typically have had to do with signage, labels, or domain names; in the metaverse, the following act as equiidentifiers: avatar names,

⁹⁷² C. H. Wong, "Trademark Dilution by Blurring in Virtual Economies," *Columbia Journal of Law & the Arts* 46, no. 3 (2023).

branded skins, virtual storefront names, and platform specific identity handles that can cause confusion as to the affiliation or authenticity of users.

Domain names are core due to the fact that many metaverse ecosystems are still delivered through web-linked portals and marketplace websites, and domain-based portals. Cybersquatting and typosquatting are up-to-date issues, especially used to treat domain names where consumers are redirected to unauthorized metaverse experiences, NFT collection, and identity fraud pages in marketplaces. In this type of instances, the harm is derived from diversion of customer visitors and from damage to trust. Domain name misuse becomes especially harmful in metaverse commerce because users often use "official" links to their digital assets, connect wallets or make purchases of virtual goods. A deceptive domain may therefore contribute to not only confusion by its trademark, but also the financial crimes of fraud and identity theft⁹⁷³.

Avatar impersonation is an overriden form of misappropriating identity specific to the metaverse. In immersive environments, the means of verification are often not formal, but instead made visible through avatar cues, such as nameplates, badges, branded attire, as well as behavioural patterns. A bad actor may author an avatar under a brand name (such as "OfficialBrandStore" or "BrandSupport") and themselves take on aspects of that brand's visual design in an attempt to make themselves appear official. Such impersonation can lead consumers to make false purchases, provide sensitive data in their wallet, or make fake transactions. From a trademark perspective, this is an extended form of passing off: as the impersonator reflects identity falsely in order to appropriate good will to cause injury. The harm is not only reputational but potentially transactional and irreversible, especially where

blockchain-based transfers cannot be readily reversed.

Digital identity misappropriation also occurs involving unauthorized trademarks in virtual storefront names, marketplace profiles, and creator accounts. Some platforms enable creators to set up "shops" in a metaverse, and thus the misuse of a trademark for shop names might give the impression of official licensing. Similarly, the use of trademarks in collection names for NFT collections, metadata field and promotional accounts can potentially cause confusion as to whether or not such use is endorsed. Unlike conventional online confusion, the Metaverse confusion may be fortified with firm - immersive - realism: the more visually convincing the impersonation, the greater the chances of consumer reliance.

A further level of complication is created by the hybrid public-private model of enforcement. Most identity disputes for the metaverse are firstly handled by using platform reporting system rather than going to courts. This grants platforms with quasi-regulatory power to decide between authentic and inauthentic as well as take action against impersonation. Whilst efficient, this approach may result in inconsistent standards, limited transparency and uneven results. For trademark owners, effective protection therefore required to be based on platform verification schemes, brand registry schemes, and expedited disbursement of fake identities.

Accordingly, domain names, avatars, digital identity markers in metaverse environments are not peripheral branding tools and are rather core commercial identifiers whose misuse can create confusion, misrepresentation and damage equivalent to and, in certain circumstances, more severe than the traditional online infringement.

Cross-Border Enforcement Issues

Cross-border enforcements is among the most structure hard within the metaverse points to trademark protection. Trademark rights are

⁹⁷³ Opperbeck, "Artificial Intelligence, the Metaverse, and Intellectual Property Law."

territorial based rights that are granted and enforced within national boundaries, whereas metaverse platforms are based on globally accessible networks that facilitate transnational transactions in real time. This tension leads to a jurisdictional and procedural gap and makes the enforcement difficult at every level of action: the jurisdiction problem, the evidence collection, the identification of the infringer, and the securing of an adequate remedy.

A primary difficulty is in determining the location of infringement. In the physical commerce aspect, infringement will be committed where counterfeit goods are sold or distributed. In the case of metaverse commerce, the wrongdoing could be committed by a seller in one country, a platform in another, servers in various parts of the world, and consumers in different states. The situs of the infringing activity becomes ambiguous and courts may take different approaches – focusing on the impact on consumers, the target, or accessibility. This creates unpredictability and forum clashes, especially where the parties are strategically choosing favourable jurisdictions.

Cross-border enforcement is also complicated by the issues of pseudonymity and decentralization. NFT marketplaces and blockchain systems are often not involving wallet addresses but verified legal identities. Even where a platform can delist infringing items, the identity of the minter/seller might remain obscure. When infringers are operating across borders, summons and compliance are, for practical reasons, difficult, and legal proceedings can be enforced without international cooperation⁹⁷⁴.

Another problem here is one of evidence and admissibility. Digital evidence of infringement could include screenshots, transaction hashes and blockchain records, metadata logs and history of interaction with the platform. Collecting such evidence in a form admissible

at court, maintaining chain of custody and attributing conduct to a legally identifiable defendant are complicated tasks. Moreover, platform cooperation may be critical to provide the backend evidence, yet the platforms may be outside the jurisdiction and this raises questions of data access and mutual legal assistance.

Finally, remedies themselves could be limited. Injunctions issued by a domestic court may not be enforced against the foreign platforms or foreign actors pristine absence of its demonstration through local legal systems or voluntary compliance. Monetary damages may be hard to extract from pseudonym users. As a result, trademark owners will often make use of private mechanisms of enforcement – the use of platform takedowns, marketplace reporting systems and wallet black listing – instead of relying on traditional litigation mechanisms alone. While pragmatic, this dependence highlights the structural inadequacy of pure territorial enforcement models and their role in tackling metaverse-based infringement.

In conclusion, cross border enforcement issues in the metaverse stem from a fundamental mismatch: territorially anchored trademark rights must function in a technologically borderless marketplace. Solving this mismatch necessitates not only doctrinal adaptation, it also requires procedural modernization, enhanced platform cooperation norms, and international co-ordination mechanisms that can quickly, consistently and enforceably respond to digital infringement.

Analysis of Recent Global Cases

The legal landscape of decisions regarding trademark related cases that come up along the margins of the digital and metaverse are moving extremely fast. While certainly, explicit metaverse jurisprudence is still emergent there is, a series of high-profile and involving cases (global) concerning non-fungible tokens (NFTs), online counterfeiting, and misuse of trademarks in digital asset markets send instructive tracts of doctrine. They to show how courts are

⁹⁷⁴ Hughes, “Avatar Identity and Trademark Law: Misrepresentation in Immersive Environments.”

beginning to apply traditional trademark principles such as likelihood of confusion, trademark distinctiveness and commercial use to the technologically mediated environment and the challenges these principles are facing when expressive purpose, decentralized platforms and novel asset classes combine with established tendencies in IP law⁹⁷⁵.

One of the most prominent examples of such a case in America is *Hermes v. Mason Rothschild* to do with the so-called "MetaBirkins" NFTs. A federal jury in the United States found that Rothschild's creation and sale of digital tokens featuring imagery closely resemble to Hermes iconic Birkin handbag marks constituted trademark infringement and dilution and that his First Amendment defence could not protect the use of the trademarks in this commercial context. The verdict of the jury solidified the idea that the NFTs in which protected trademarks are used may be susceptible to prospective infringement analysis if the NFTs are presented in a way that may imply that they are in some manner sponsored or affiliated themselves with that brand, especially if those digital representations are trading on the brand's reputation and good will. This case is significant because of its treatment of digital tokens – even though innate immaterial – as commercial products for trademark application purposes, so as to reinforce the doctrinal adaptability of traditional trademark tests to new digital forms.

Another high-profile example is Nike's legal battle against StockX that deals with the alleged counterfeiting and trademark misuse regarding sneaker-related NFT's and digital products. In this dispute, Nike claimed that StockX's turn if 'NFTs' of Nike footwear was a trademark infringement and was confusing as to authenticity and origin. The case did culminate in a settlement, however, which highlights both the commercial aspect of it and the willingness of established brands to make a stand on their IP rights against marketplaces

and resellers operating in digital spaces. The courtesy significance of this litigation lies not just in substantive trademark issues but strategic utilization of legalizing enforcement to influence industry norms to discourage unlawful commercial use of brand identifier in the digital millennium asset markets.

A different doctrinal dimension was found in *Yuga Labs vs. Ryder Ripps*, about the Bored Ape Yacht Club collection of NFTs (or BAYC) The Ninth Circuit considered whether NFTs are "goods" in the context of the trademark law and whether the defendant's use of Bored Ape trademarks in an allegedly satirical NFT project was liked to have infringement or dilution. The court of appeal clarified that NFTs can qualify as a good or service under the trademark statute to be protected under the Lanham Act, but confirmed that the scope of the Lanham Act covers digital assets that operate like commercial products traded. At the same time, the court also stressed that it must consider the probability of consumer confusion and the expressive context of the defendant's use. The decision reflects the courts' struggle to reconcile the competing interests of trademark protection against the free expression concerns – a theme that will be a common thread in disputes relating to the metaverse where the two may often be in conflict, with expressive digital art and commercial exploitation frequently the subjects.

European jurisprudence has also dealt with the digital execution of trademarks; however, this was not specifically with metaverse environments. For instance, the Court of Justice of the European Union's ruling in *L'Oreal v. eBay* has made clear the duties of online marketplaces in the prevention of infringement of trademarks by third-party sellers. The CJEU ruled that a marketplace would be liable where it is actively involved in commercial transactions and doesn't take action to prevent infringement. Although this case predates the existence of NFTs and immersive platforms, its reasoning has direct relevance for the digital marketplaces and virtual asset platforms of

⁹⁷⁵ Bradley and Kolev, "Competitive Dynamism in Nascent Markets: Trademarks and Superstar Firm Entry in the Metaverse."

modern day that serve as the means for the sale and distribution of trademark protected goods without being directly involved in their production. The European approach plays a key role in insisting on effective enforcement, marketplace accountability as a supplement to substantive rights.

Collectively, these cases from around the world demonstrate a number of doctrinal trends. First, the courts are becoming more willing to consider digital items such as NFTs as "goods" or "services" for trademark law use, provided that the NFT is used in exchange for valuable information and to act as source identifiers or items that have value. Second, the likelihood of confusion – traditionally measured using consumer perception in the physical world – is being translated into considerations for online and digital behaviours such as marketplace presentation, token metadata and user expectations. Third is the addition of claims of expressive context and free speech: this relates to digital projects in which they present themselves in the space of the role of the rooms and art, courts are still struggling with how to deal with this tension, evaluating whether it is a statement possibility, actively misleading or merely reference. Finally, marketplace and platform liability is establishing itself as an important part of enforcements, which forces platforms to take proactive measures to keep the usage of trademarks under check.

These cases offer a doctrine basis to analyse trademark utilization and enforcement issues for activities in the metaverse. They highlight that although the legal principles are still based on traditional classes or characteristics for registration of trademarks, the determinations should be designed with understanding of technological functionality, user interaction patterns, and the commercial design of digital asset ecosystems.

Remedies and Enforcement Mechanisms

The enforcement of trademark rights in the metaverse is a multi-level challenge with not only traditional means of redress available via

the judiciary but also with new options to obtain redress through private governance tools. Remedies should be used not only to deal with infringement and passing off but also in pragmatic ways which may be implemented in technologically mediated ecosystems where decentralization, cross-border access and rapid replication are prevalent.

Judicial Remedies

The foundation of the enforcement power of trademark rights is the judicial power to issue injunctive relief, damages, accounts of profits, and other equitable remedies. In traditional legal settings, the courts regularly grant preliminary and permanent injunctions to stop ongoing and future infringement so as to preserve the trademark owner's ability to control competitive space. In digital and metaverse dispute cases, injunctions can be against specified acts of use, including preventing minting or selling of infringing NFTs, removal of unauthorized branded virtual goods from marketplaces, preventing avatar impersonation, etc. A fundamental shortcoming of judicial relief is enforceability-effects, with orders made by a court in one jurisdiction not necessarily binding platforms or actors located in another (especially where platforms are decentralised or located outside the court's territorial miles)⁹⁷⁶.

Damages and account of profits are monetary remedies to compensate the owner of the trademark for economic loss or a deprivation of unjust enrichment to the infringer. In the case of virtual goods and NFTs, computing damages is more difficult due to the fact that the value of digital goods is often speculative, volatile, and dissimilar to the value of physical goods markets. Courts have struggled with whether to rely on token sale prices, secondary market price appreciation or general market impact on goodwill of the brand. These complexities demand advanced economic analysis and effective evidentiary frameworks.

⁹⁷⁶ Lai, "Consumer Confusion in Immersive Digital Environments."

Administrative level and Platform level enforcement

Given the limitations of Court based remedies, reliance on administrative mechanisms and tools for platform governance are on the rise among trademark owners. Many digital marketplaces and NFT platforms have implemented brand protection programs, so that trademark owners can register their trademarks with the platform and have infringing listings expedited on the platform. Such programs are quasi-administrative enforcement programs that serve to lower the need for protracted litigation.

Notice-and-takedown procedures are another popular form of enforcement mechanism. Trademark owners may send formal notices to platforms indicating the infringing content to these companies and demanding that the content be urgently removed. While efficient, such procedures are often subject to platform discretion and internal standards, and may not have the procedural safeguards which are common to judicial adjudication and adjudication⁹⁷⁷.

Automated monitoring and filtering technology are a type of proactive approach to enforcement. Platforms can use digital fingerprinting, scanning of metadata of tokens and algorithmic detection of likely infringing work before it is published. While the automated systems this can create are promising in the realm of technology, other issues have arisen about the potential for over-reach and for false positives to be a concern where a legitimate use or a piece of art could otherwise be subjected to a pressure that should not exist in the available space.

Cooperation between countries and Mutual Legal Assistance

Enforcement in metaverse environments often goes across country borders requiring cooperation across countries. Trademark owners can file for judicial orders in various

countries or pursue coordination through various international treaties and mutual legal assistance systems. While not specifically addressing digital assets, current frameworks such as the Madrid Protocol (for the registration of trademarks) and bilateral enforcement treaties could enable cross-border remedies. Enhanced cooperation between national IP offices, judiciary network and enforcement agencies remains a policy imperative against the borderless nature of digital commerce.

Private Contractual and Technological Solutions

In addition to judicial and administrative remedies, new remedies based on contract and the new technologies are playing an increasing role. Terms of service and user agreements commit participants of the platform in respecting CO and allow such platforms to implement brand-safe environments. Smart contracts have the ability to write licensing terms, usage limits, and automated compliance requirements that dispatch sanctions when fulfillments happen. While powerful, these instruments must be carefully designed in order to balance between IP and users rights and innovations.

Optimizing Enforcement While Offering Innovation

A key normative issue in formulating solutions to metaverse trademark infringement is balancing enforcement with innovation. Overly aggressive forms of enforcement could stifle creativity, legitimate expression and decentralized participation. On the contrary, lax enforcement defeats predictable rights, economic incentives and consumer trust. Accordingly, remedies should be tailored to the nature of harm, the existence and extent of commercial exploitation, and the ability of enforcement tools to deliver an equitable result without discouraging technological development⁹⁷⁸.

⁹⁷⁷ Mezei and Arora, "Copyright and Metaverse."

⁹⁷⁸ Lee, "Cross-Border Enforcement of Intellectual Property in Virtual Worlds."



The combination of judicial power, platform management, administrative machinery, and technological protection forms a composite enforcement architecture that will be able to address the complex issues in metaverse trademark disputes. Effective remedies must recognize the shortcomings of any mechanism individually and instead adopt the idea of acting on multiple fronts that harness the benefits of both legal doctrine and technological innovation and cooperative compliance at both a local and global scale.

