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Aranya Nath & Sreelakshmi B.

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Exploring Legal and Regulatory Challenges for Intellectual Property in Metaverse

- Aranya Nath¹ & Sreelakshmi B²

Abstract

Today we are in the age of technology, where Metaverse is a real-time 3D that forms newly invented digital platforms where everyone can interact with each other. Earlier in the Internet age, it was mainly on read-only Web.³ Now, cutting-edge technology is reaching the next level of awareness, commonly called Web 3.0. Enabling individuals to converse autonomously symbolizes a more individualized form of internet technology that offers spatial experiences akin to those found in the real world. Allowing users to speak independently indicates a more individualized technology format that will provide multidimensional sensations equivalent to those encountered in nature. Future advancements in interactive experiences might cause the lines separating the real and virtual worlds to become hazier due to Web 3.0. It will be facilitated by the Convergence of enabling technologies, including, but not limited to, blockchains, AR & VR. The Metaverse is about how we will interact with it, whereas Web 3.0 is about designing the future Internet. Such transitions will provide significant challenges and threats for metaverse platform users, competitors, and owners. It would need regulators and legislators to thoroughly scrutinize problems such as Intellectual Property Rights (IPRs). The aim of this research would be to investigate the potential issues that the Metaverse will bring for IPRs, as well as to explore IPR concerns connected to the Metaverse in the context of India.

Keywords: *Intellectual Property, Metaverse, AI, Web 3.0 Internet*

Introduction

The use of the Internet skyrocketed in the twenty-first century. “Web 1.0”, sometimes known as the “read-only Web”⁴, was the initial version of the Internet, with a stable website and even a layout that rendered the Internet accessible and readable. “Web 2.0”, the most recent version,

¹ Ph.D. Scholar, Damodaram Sanjivayya National Law University; email: subhamitanath002@gmail.com

² Research Assistant, The Centre for Research, Development and Training in Cyber Laws and Cyber Security, TNNLU; email: sreelakshmi.sreela@gmail.com

³ Explained Desk, ‘What Is Web 5.0 – the Blockchain-Powered Digital Network Twitter’s Ex-CEO Wants to Build?’ (*The Indian Express*, 3 June 2022) <<https://indianexpress.com/article/explained/everyday-explainers/what-is-web-5-0-blockchain-powered-digital-network-twitter-ex-ceo-7967663/>> accessed 26 November 2022.

⁴ Desk (n 3).

encourages usability, engagement, and device interoperability. As a result, Web 2.0 is oriented toward the user and thus is tasked with creating social media interactions, typically aided by consolidated infrastructure. It should raise the digital interface to the next level of functionality, which is now known as “*Web 3.0*”. Web 3.0 is a more personalized online application focusing on other equivalents to Google Maps. When prospects expand, Web 3.0 may eventually blur the distinction between virtual and real domains. It has the ability to accomplish this through the confluence of technological solutions like “*AR Technology, Virtual Worlds, Extended Reality, AI, Internet of Things*”, and increased networking such as “*5G, blockchains, and machine learning*”. Whereas, Web 3.0 was focused on influencing the future Internet, project Metaverse is interested in how we interact with it. Knowing the concept of Metaverse is becoming extremely important even as the world faces the modern electronic age. Some define Metaverse as “*a global network of spatially structured, mostly 3D content.*”⁵

It can be commonly described as any replicated virtual era viewed through AR or VR, combining social networking sites and blockchain technologies to facilitate serious social interactions.⁶ This terminology, “metaverse,” was utilized in Neil Steven's 1992 fiction “Snow Crash” to refer to a virtual retreat for the inhabitants to serve the purpose of exploring beyond their miserable world.⁷ The infrastructure and technology to bring the Metaverse into existence improved drastically with the introduction of outside Sensorama, its first VR device, in 1956.⁸

⁵ Tony Parisi, ‘The Seven Rules of the Metaverse’ (*Metaverses*, 23 October 2021) <<https://medium.com/meta-verses/the-seven-rules-of-the-metaverse-7d4e06fa864c>> accessed 26 November 2022.

⁶ Hitesh Malviya, ‘Metaverse: How the Metaverse Future May Look like in 2030’ (*The Economic Times*, 29 April 2022) <<https://economictimes.indiatimes.com/markets/cryptocurrency/how-the-metaverse-future-may-look-like-in-2030/articleshow/91175337.cms?from=mdr>> accessed 26 November 2022.

⁷ Tyler Sonnemaker, ‘The Creator of the Term “metaverse” Wants People to Know He Has “Nothing to Do” with Facebook’s Meta Plans’ (*Business Insider India*, 30 October 2021) <<https://www.businessinsider.in/tech/news/the-creator-of-the-term-metaverse-wants-people-to-know-he-has-nothing-to-do-with-facebooks-meta-plans/articleshow/87382659.cms>> accessed 26 November 2022.

⁸ Bernard Marr, ‘A Short History Of The Metaverse’ (*Forbes*, 21 March 2022) <<https://www.forbes.com/sites/bernardmarr/2022/03/21/a-short-history-of-the-metaverse/>> accessed 26 November 2022.

Following that, Second Life, the first initiative which resembled the Metaverse, was followed by a flurry of new platforms, including AR/VR services, which extended the Metaverse's reach.⁹

As per the forecast of scientists, the evolution of Metaverse, AR, and VR technologies will continue to create new doors and significantly impact electronic marketplaces, working environments, and social experiences.¹⁰ Furthermore, it is believed by others that the Metaverse will be the next big internet iteration, invading our social element, even though there has to be greater clarity and consensus with regard to what its digital capabilities entail of and its governance. With such seeming certainty, we must actively participate in its growth and repercussions before we can prevent this evolution from passing us by.

How precisely would the Metaverse perform?

The Metaverse is the following generation of the Website, enabling artists to cooperate and provide interconnected immersive activities-based experiences. Thus, according to our knowledge, this Metaverse comprises several versions: a centralized closed platform controlled by Big Tech or a decentralized one that uses open protocols and is blockchain-based, including cryptocurrencies, non-fungible tokens, and independent, autonomous organizations. Interoperability, sovereignty, decentralized administration, and finance systems¹¹ differ between the two versions.

In this paper, recent trends and the several legal and regulatory structures that must evolve to meet the challenges posed by Metaverse are analysed. The paper also reviews several aspects of convergence in the

⁹ 'Zuckerberg's Metaverse: Lessons from Second Life' (*BBC News*, 5 November 2021) <<https://www.bbc.com/news/technology-59180273>> accessed 26 November 2022.

¹⁰ Vijay Chandar, 'Investing in the Metaverse: New Opportunities in Virtual Worlds' (*Morgan Stanley*) <<https://www.morganstanley.com/articles/metaverse-opportunities-virtual-reality-augmented-reality-technologies>> accessed 26 November 2022.

¹¹ Jamie Burke, 'The Open Metaverse OS' (*Online Ventures*) <https://outlierventures.io/wp-content/uploads/2021/08/OV-Metaverse-OS_V6.pdf> accessed 26 November 2022.

Metaverse before examining its implications. The potential legal and taxation difficulties that could occur in the future are also examined.

Metaverse and it is Convergence

By integrating actual and virtual environments, the Metaverse creates a seamless experience for the user, through the use of an “Avatar”¹² created by you. Experts like Jon Radoff have identified seven components that support the Metaverse: the “Experience,” “Discovery,” “Creator Economy,” “Spatial Computing,” “Decentralization,” “Human Interface,” and “Infrastructure”.¹³ Augmented and virtual reality, artificial intelligence, non-fungible tokens, blockchain, and the internet of things (IoT) are all contributing technologies to the realization of the Metaverse, bringing the various layers of the Metaverse to completion.

Augmented Reality/Virtual Reality

Augmented and virtual reality technologies have enhanced the immersive nature of the Metaverse by expanding the possibilities of spatial computing and improving human interaction beyond the limitations of legacy technology. Emerging technology known as Mixed Reality combines elements of Virtual Reality (VR) with Augmented Reality (AR), creating a new Mixed Reality (MR).¹⁴ In theory, MR technology might let users have an experience that fuses their actual, augmented, and digital environments in real-time. All of these methods and tools have seen extensive use in the past. Immersive experiences within Metaverse platforms are now available on Oculus Quest 2, Samsung, and PlayStation VR headsets. Consumer products like the HTC Vive Flow advance wearable technology to the next level of the

¹²JP Morgan ‘Opportunities in the Metaverse’ (JP Morgan & Co.) <<https://www.jpmorgan.com/content/dam/jpm/treasury-services/documents/opportunities-in-the-metaverse.pdf>> accessed 26 November 2022.

¹³ Jon Radoff, ‘The Metaverse Value-Chain.’ (Medium, 7 April 2021) <<https://medium.com/building-the-metaverse/the-metaverse-value-chain-afcf9e09e3a7>> accessed 26 November 2022.

¹⁴ qianw211and others, ‘What Is Mixed Reality?’ (Microsoft) <<https://learn.microsoft.com/en-us/windows/mixed-reality/discover/mixed-reality>> accessed 26 November 2022.

Metaverse's human interface by transforming VR gear from a bulky headpiece into a lightweight, detachable set of goggles.¹⁵ Businesses like Snapchat, IKEA, and Pokémon have also used AR technologies to help consumers place digital aspects on their physical Reality (bodies, houses, and streets). And enabling holographic technology through products like Microsoft's HoloLens 2 would only increase its use in the realm of engineering, education, healthcare, etc.

Internet of Things (IoT)

A substantial part of the Metaverse's infrastructure relies on the Internet, and this connectivity is further extended into the real world by the IoT. While doing so, its function blends digital and physical elements, bridging the gap between the two. For this reason, the IoT results from any convergence of perfect technologies that can talk to one another and do tasks that are ultimately valuable to humans. Sensors in home appliances like thermostats and voice-activated speakers collect and respond to a wide range of data by virtue of the IoT, which connects thousands of devices. Also, the massive amounts of data obtained from the virtual online world of the Metaverse contributes to building the infrastructure of the platform and creating a more interconnected world. One possible use of IoT is the use of a “*Digital Twin*”, a virtual duplicate that shares many of the same characteristics as the original but is updated in near-real time.¹⁶ In conclusion, IoT allows for the smooth integration of a wide variety of physical objects into a 3D setting. It might be the factor whose Convergence is crucial for expanding the Metaverse. Once complete compatibility achieves, only then may it be possible to imagine the correct scale.¹⁷

¹⁵ ‘VIVE Flow - VR Glasses for Your Metaverse Journey (*United States*)’ <<https://www.vive.com/us/product/vive-flow/overview/>> accessed 26 November 2022.

¹⁶ Leonard Lee, ‘How to Leverage Internet of Things (IoT) Opportunities in the Metaverse’ (*Acceleration Economy*, 17 February 2022) <<https://accelerationeconomy.com/Metaverse/how-to-leverage-internet-of-things-iot-opportunities-in-the-Metaverse/>> accessed 26 November 2022.

¹⁷ Bruce Grove, ‘From the IoT to Metaverse’ (*Polystream*) <<https://polystream.com/from-the-iot-to-Metaverse/>> accessed 26 November 2022.

Artificial Intelligence

Immersion in the Metaverse entails several different components, such as exploration, creator economics, spatial computing, and infrastructure, all of which might be fuelled by artificial intelligence. Through the intelligent evaluation of data inputs like speech through Alexa or textual/visual inputs using NVIDIA's GauGAN2, AI algorithms may help automate IT processes, intelligently network, process language, make personalized recommendations, and allow for total immersion within the digital realm.¹⁸ Organizations are also contributing to AI development with initiatives like self-supervised learning and gesture detection. It envisages that the Metaverse would give a more realistic virtual experience by monitoring things like eye and body movement.¹⁹ Another use of AI in Metaverse is producing avatars, or digital personas.

Blockchains

Blockchain is critical to preserving digital security and identity checks and running smart contracts (digital contracts created and performed on the blockchain) for Metaverse trading. This technology widely uses on platforms such as VRChat, which runs virtual markets, and Crypto voxels, which organizes virtual art exhibits. Another critical use case for blockchain in this expanding technical area is preserving individuality and property rights to boost the creator economy via NFT-based businesses.

¹⁸ Isha Salian, 'GauGAN Turns Doodles into Stunning, Realistic Landscapes' (*NVIDIA Blog*, 18 March 2019) <<https://blogs.nvidia.com/blog/2019/03/18/gaugan-photorealistic-landscapes-nvidia-research/>> accessed 26 November 2022.

¹⁹ Venture Beat, 'Meta Describes How AI Will Unlock the Metaverse' (*VentureBeat*, 2 March 2022) <<https://venturebeat.com/technology/meta-describes-how-ai-will-unlock-the-metaverse/>> accessed 26 November 2022.

Usage of Metaverse in various Industries

Entertainment and Media

The Metaverse, a device that allows a more profound immersion in digital space, can revolutionize the production, distribution, and reception of movies and other forms of media in the not-too-distant future. It comprises transmitting traditional 2D content to VR movie theatres²⁰, accessing a more immersive informational experience, producing and consuming 360-degree videos, and networking at live Metaverse events. Even live concerts have become popular attractions in the Metaverse due to the collaboration of many musicians and content producers to stage virtual acts that are similar to events that take place in real life. In order to accomplish this goal, popular online games such as Fortnite and Roblox have teamed up with well-known singers such as Lil Nas X, Ariana Grande and Travis Scott to create one-of-a-kind and interactive musical experiences that have attracted millions of users.²¹

In addition, large corporations in the fields of media and technology are investing a significant amount of money towards developing expertise and enhanced technologies for the Metaverse. Sony has established a strategic collaboration with Roblox to create distinctive musical experiences for the Metaverse community.²² This comes on the heels of the Reality Labs division of Meta's investment of \$10 billion in the Metaverse.²³ Nvidia is introducing the Omniverse technology, which

²⁰ Airtel, 'Airtel Launches India's First Multiplex in the Metaverse' <<https://www.airtel.in/press-release/06-2022/airtel-launches-indias-first-multiplex-in-the-metaverse>> accessed 26 November 2022.

²¹ Rob Le Donne, 'Limits Are Non-Existent in the Metaverse!' Video Game Concerts Become Big Business' (*The Guardian*, 7 August 2021) <<https://www.theguardian.com/music/2021/aug/07/no-limits-in-the-metaverse-video-game-concerts-big-business>> accessed 26 November 2022.

²² Sony Music, 'Roblox Partners with Sony Music Entertainment to Bring Their Artists into the Metaverse - Sony Music' (*Sony Music*, 6 July 2021) <<https://www.sonymusic.com/sonymusic/roblox-partnership/>> accessed 26 November 2022.

²³ Sheila Jagannathan 'Education Meets the Metaverse: Reimagining the Future of Learning' (World Bank Group) <<https://olc.worldbank.org/about-olc/education-meets-the-metaverse-reimagining-the-future-of-learning>> accessed 26 November 2022.

allows for the digital creation of simulations of the real-world.²⁴ Furthermore, Unity is about to launch the Metaverse as part of their acquisition of visual effects company Weta Digital, a deal worth \$1.625 billion.²⁵ These developments occur simultaneously as Sony provides commercial opportunities to its music artists.

Gaming

The gaming industry having an estimated 3.24 billion gamers worldwide²⁶, has pushed businesses to connect with AR/VR, video streaming, real-time 3D rendering, NFTs, blockchains, cryptocurrencies, and other compatible architecture. The gamers make up approximately 40 percent of world's total population. Numerous projects, including Axie Infinite, Fortnite, and Roblox, have already been released to the public.

Axie Infinity is a game that aims to gather “*Smooth Love Potions*” which works similarly to bitcoins and may be exchanged or sold in the future, has over 350,000 daily active participants. Furthermore, Epic Games’ Fortnite is an online place where users may customise their own landscapes and fight zones, with a record-breaking 15 million people logging in simultaneously. In this context, Metaverse gaming is more versatile since players will have more latitude for customization in creating virtual locations and establishing sub-games within a bigger game. Indeed, Roblox’s primary driver of success was its feature that allowed people to develop their microgames that Avatars could play in return for Roblox’s money, “*Robux*”. It demonstrates that Game Finance (Game Fi) is an essential part of Metaverse gaming, as players receive a mix of in-game tokens, cryptocurrencies, and NFTs as rewards, which can subsequently be used to stake, trade, or sell. Unlike traditional video games, this concept

²⁴ NVIDIA, ‘Omniverse Platform for 3D Design Collaboration and Simulation’ (NVIDIA) <<https://www.nvidia.com/en-in/omniverse/>> accessed 26 November 2022.

²⁵ Greg Kumparak, ‘Unity Is Buying Peter Jackson’s Weta Digital for over \$1.6B’ (TechCrunch, 9 November 2021) <<https://techcrunch.com/2021/11/09/unity-is-buying-peter-jacksons-weta-digital-for-over-1-6b/>> accessed 26 November 2022.

²⁶ David B. Black, ‘Cartoons And Video Games Evolved Into Bitcoin And NFTs’ (Forbes, 5 May 2022) <<https://www.forbes.com/sites/davidblack/2022/05/05/cartoons-and-video-games-evolved-into-bitcoin-and-nfts/?sh=6633a9ff316e>> accessed 26 November 2022.

is built on a play-to-earn approach that enables users to transfer their digital possessions beyond the confines of the gaming platform.

Healthcare

The healthcare industry is poised to widen the medical uses of AI, AR and VR technologies with the launch of Metaverse, which will enhance patient output and scale up research and development. In India, healthcare providers and digital health firms are researching whether it would be possible to develop meta-hospitals, virtual reality-mediated activities, and health wellness metaverse platforms.²⁷ GOQii, for example, just introduced a Metaverse ecosystem that rewards healthy behaviours and gamified fitness tasks.²⁸ Counselling and psychotherapy therapies for mental disorders are other vital areas of attention for health professionals.

Education

The field of education may be one of the Metaverse's most successful applications. Because of the proliferation of educational technology, most learning now occurs online. On the other hand, in-person education can give a different level of social interaction and engagement than it may provide. The standard of educational provision can be helped in several ways by utilizing the Metaverse. By combining traditional online education with augmented and virtual reality technologies, the Metaverse can create an extremely lifelike learning environment that even incorporates elements of the natural world. Students, for instance, can “*virtually experience*” the workings of an atom or the human body. It may also transport students to virtual factories to get a closer look at the machinery. Avatars, on the other hand, can mimic the identities of their users, which can include both students and teachers,

²⁷ Neetu Chandra Sharma, ‘Healthcare companies are entering the metaverse. But can it help the sector?’ (Business Today, 22 June 2022) <https://www.businesstoday.in/crypto/story/healthcare-companies-are-entering-the-metaverse-but-can-it-help-the-sector-338719-2022-06-22> accessed 26 November 2022.

²⁸ GOQii, ‘GOQii To Launch Health Metaverse in Partnership with Animoca Brands’ (GOQii, 29 March 2022) <<https://goqii.com/blog/goqii-to-launch-health-metaverse-in-partnership-with-animoca-brands/>> accessed 26 November 2022.

providing an essential quality to meta-classes. Learning is more interesting, entertaining, and beneficial by attending a school or other institution in the Metaverse. In addition to this, it can assist in overcoming access barriers because every resident of the Metaverse has access to the same institute even while inside the confines of their own house. Virtual classrooms can also link world-class sports coaches to children anywhere in the world, thanks to recent technological advancements in body-motion recognition. However, educational institutions must ensure that learners of all ages can access the appropriate technology. Students can learn more quickly with contextualized digital learning in the Metaverse. Companies like Meta²⁹ and Roblox have invested in technology that provides meta-educational solutions to fulfil this aim.

Regulatory Challenges

Metaverse poses many challenges relating to copyright, patents, and trademarks; privacy and data collecting; antitrust or competition; freedom of expression and defamation; and intellectual property difficulties.³⁰ One of the main regulatory challenges to regulating the Metaverse is jurisdiction. The advent of technology, which made borders not a barrier anymore, is also making it difficult to regulate. The most significant challenge in the field of jurisdiction is figuring out how and when courts can exercise their authority over natural and legal people residing in other countries. It is the primary obstacle. Another issue is whether or not content producers should be liable to the legal systems of every country in the world simply because their works can be purchased in a given nation.

Virtual worlds can be classified as either global or regional, or national. Anyone with an account and Internet access can enter globally

²⁹ Meta, 'Meta Immersive Learning' <https://about.meta.com/immersive-learning/?utm_source=about.facebook.com&utm_medium=redirect> accessed 26 November 2022.

³⁰ Kathryn Park, 'Trademarks in the Metaverse' (*WIPO Magazine*, March 2022) <https://www.wipo.int/wipo_magazine/en/2022/01/article_0006.html> accessed 2 December 2022.

virtually. Regional virtual have geographically separated content. Virtual worlds can be regulated, as evidenced by the fact that regional virtual worlds exist. User accounts are required to join any online game or virtual world. It may enforce by the provision requiring a bank account in X country from account creators, or it could restrict people connecting from a specific range of national IP addresses. Users are bound together in various ways, including End-User License Agreements (EULAs), payment mechanisms, and possibly even liability through identification via their Internet Service Provider, all imposing de facto regulation into the ecosystem. With regards to the jurisdiction issue, therefore, the regional virtual world is a solution.³¹

As the Metaverse continues to mature and jurisdictional issues relating to the location of the avatar to determine the appropriate forum to resolve potential disputes become murkier, it is possible that an international law of the Metaverse could be developed to address these concerns. It would allow for more efficient resolution of potential legal conflicts within the Metaverse.³² The Metaverse contains a touch of imagination, and its increased degrees of freedom can also lead to an increased risk of dishonesty and illegal activity. Although the risk of physical injury may be low, there is still a possibility that consumers will suffer mental anguish. The absence of a well-established legal framework or repercussions may increase likelihood of illegal or abusive behaviour.³³

While India looks to have both the technical and policy underpinnings necessary for the emergence of the Metaverse, how effectively to manage the technology behind that growth remains a contentious topic of discussion. In its most recent budget, the Union

³¹ Andres Guadamuz, 'Back to the Future: Regulation of Virtual Worlds' (2007) 4 SCRIPTed: JLTS 242 <<https://heinonline.org/HOL/Page?handle=hein.journals/scripted4&cid=260&div=24&collection=journals>> accessed 2 December 2022.

³² Ben Chester Cheong, 'Avatars in the Metaverse: Potential Legal Issues and Remedies' (2022) 3 ICLR 467 <<https://link.springer.com/10.1365/s43439-022-00056-9>> accessed 2 December 2022.

³³ Nitin Kumar, 'Council Post: Six Unaddressed Legal Concerns for the Metaverse' (*Forbes*) <<https://www.forbes.com/sites/forbestechcouncil/2022/02/17/six-unaddressed-legal-concerns-for-the-metaverse/>> accessed 2 December 2022.

decided to levy a 30% tax on profits from the sale of digital assets like cryptocurrencies and NFTs.³⁴ In doing so, the government acknowledges that NFTs have value, even if it does not fully embrace NFT ownership. In addition to raising important problems about NFTs, Metaverse poses important legal questions about privacy, safety, and security.

Since the Metaverse is an extension of the internet and reality as we know it today, the many problems we face in the digital realm today—including snooping, data breaches, harassment, and hate speech—are only going to get worse as more and more people move their lives online. Since it is not entirely apparent whether existing law safeguards relating to the use of intellectual property items may extend to metaverses or not, the concept of metaverses has the potential to exacerbate the already existing intellectual property debate.³⁵ It would be impossible to enforce such a law in the Metaverse even if they did.

The Metaverse has many possibilities for firms and individuals to conduct economic activity, including the extensively mentioned NFT transaction. The Metaverse features a copyright and trademark system because business interactions and purchases are expected. “*All trademarks, including logos, brands, and slogans*” are metaverse IP assets. The existing regulatory structure may not be enough to protect their IPs.³⁶ This interconnected world brings new challenges and threats, especially to our privacy. Metaverses will capture more personal data than any other platform. The consequences will be worse. Technology can make virtual Reality popular, letting everyone experience the Metaverse. Thus, more people will log in, and more metaverse data will circulate. Metaverse corporations, developers, and users prioritize data security and privacy. It

³⁴ ‘India Budget: Ministry of Finance: Government of India’ (India Budget | Ministry of Finance | Government of India 2022-23) <<https://www.indiabudget.gov.in/>> accessed 1 December 2022.

³⁵ Code, ‘Metaverse: Need of regulation for the next “Big Thing” (IJALR, 2022), <<https://ijalr.in/metaverse-need-of-regulation-for-the-next-big-thing-in-the-tech-world/>> accessed 1 December 2022.

³⁶ Victoria Otter and others, ‘The Metaverse Challenges and Regulatory Issues’ (*SciencesPo*) <<https://www.sciencespo.fr/public/sites/sciencespo.fr/public/files/Metaverse-Group-report-final-draft-June-12-1.pdf>> accessed 2 December 2022.

can lead to privacy breaches, identity theft, and other fraud. Long-term implications await Metaverse organizations that fail to secure their data and privacy. Augmented and Virtual Reality can also demonstrate habitual escape and need, most cannot opt out. Metaverse is unprecedentedly breaking down barriers between actual and virtual worlds.

The world is still tackling the Internet's impact on privacy and personal liberties, and the next round is already knocking. The Metaverse will contribute to the ongoing discussion over how best to safeguard personal information. Currently, the Internet collects massive amounts of personal information on users for the advantage of multinational corporations and governments worldwide. A massive amount of information will be generated in the Metaverse, unlike anything seen before in the history of computing. Protecting this information will become extremely difficult for the average user of this meta world. Whether this information will be stored by international corporations or a separate data fiduciary is another data privacy matter that is yet to be resolved. To what extent would this information be stored domestically or sent outside? In the event of a data or privacy breach, who is responsible? To what extent can firms acquire data, and are there any restrictions on this? These are questions that need to be given significant thought by the government because they have not been satisfactorily resolved anywhere in the globe.³⁷

Violence against women, children, and minorities and crimes motivated by hate speech will inevitably rise due to the Metaverse. The protection afforded to intermediaries will extend to the Metaverse. It will allow politicians and other interest groups to construct virtual avatars easily and spread divisive and inflammatory messages through the Metaverse. In some cases, women are more likely to be the target of sexual assault. Women have spoken out about their deplorable experiences with groping and sexual assault in the Metaverse.³⁸ Similar incidents can happen to people of other cultural and sexual minorities. The subject of whether

³⁷ IJALR (n 35).

³⁸ *Ibid.*

or not criminal law should be implemented in the Metaverse will become irrelevant after this is over. When analyzing the definition of section 354, which of the Indian penal code defines the offense of outraging a woman's modesty, it is unclear whether a virtual avatar of a woman would be regarded as the same thing. Others argue that a person's experience in the Metaverse is the same as that of a person in the real world. So, they should be treated as one under criminal law, even though some experts argue that a distinction should be made between a person's virtual and real-world lives because it does not impact the persona physically.

Engaging in virtual worlds is unlikely to increase the risk of cyber trespassing more than regular Internet use. Having a virtual currency that can be converted into fiat currency opens the door to laundering illicit funds in any metaverse that provides such services. To sum up, it can be claimed that social virtual worlds offer novel channels for disseminating pornography, notably in the fictional presentation of child pornography. Some people's primary means of interacting with others is over the Internet. It is a great way to meet new people, learn new things, and pass the time. Some people reportedly rely only on the Internet for all of their social interactions.³⁹ Aggression and social violence are predictable outcomes of this trend. Additionally, metaverses allow users to create their own digital personas, which is partly the point of these environments. While the Internet certainly offers new opportunities for crime, Metaverses will also be a platform for the same.⁴⁰ Metaverse poses serious concerns, and the current regulations cannot be considered adequate for dealing with the potential threats posed by Metaverse.

Existing Legal Framework for Metaverse

Common claims suggesting that current laws are not applicable in the Metaverse or not tailored to that setting and that technology advances faster than the law are generally wrong. New regulations concerning e-

³⁹ Christian Laue, 'Crime Potential of Metaverses' in Kai Cornelius and Dieter Hermann (eds), *Virtual Worlds and Criminality* (Springer Berlin Heidelberg, 2011) <http://link.springer.com/10.1007/978-3-642-20823-2_2> accessed 2 December 2022.

⁴⁰ Laue (n 39).

commerce, cybercrime, consumer rights on digital content, and the liability regime for Internet service providers have been put in place by countries with a substantial Internet presence over the past 30 years.⁴¹ Although specific regulations, such as trademark and copyright law, already exist, more comprehensive regulations are needed to deal with Metaverse.⁴² At present India does not have a comprehensive data protection regime. In order to regulate the data associated with Metaverse, it is necessary to have a comprehensive data protection regime in line with EU GDPR (European Union General Data Protection Regulation). With regards to sensitive personal data alone, India has the Information Technology (Reasonable security practices and procedures and sensitive personal data or information) Rules, 2011, which can be made applicable to Metaverse as well.⁴³ It is not entirely apparent at this point whether or not the provisions under the conventional laws will extend to the virtual or online worlds. The following are some of the existing regulations that can be utilized to deal with Metaverse.

Intellectual Property Law

The copyright law applies to everything from identity to digital artwork and structures. As a result of the fact that everyone can watch this digital society, fraudulent individuals may mimic others or unfairly use the designs of others to produce value for themselves. Someone in the Metaverse can pass off real-world brands, identities, and creative works as their creations. In this scenario, someone who makes anything in a metaverse comparable to a work protected by intellectual property rights in the actual world may also be infringing on the original work's copyright. Also, create an avatar proven to be impersonating another brand, entity, or organization. The courts will order you to stop doing so and may also seek monetary remuneration. It is because impersonating another brand,

⁴¹ Andy Ramos, 'The Metaverse, NFTs and IP Rights: To Regulate or Not to Regulate?' (*WIPO Magazine*, June 2022) <https://www.wipo.int/wipo_magazine/en/2022/02/article_0002.html> accessed 2 December 2022.

⁴² Otter (n 36).

⁴³ MeitY, 'Ministry of Communication and Information Technology Notification' (11 April, 2011) <https://www.meity.gov.in/writereaddata/files/GSR313E_10511%281%29_0.pdf> accessed 2 December 2022.

entity, or organization violates intellectual property law. Similarly, if there is any trademark infringement, action can be taken under Trademark Act.

Contract Law

In the actual world, contract laws govern the enactment of legally binding contracts formed between two parties. Contract law may apply to various transactions carried out in the Metaverse, including leasing and selling virtual products and services.⁴⁴ If you enter into a contract with another party, both parties must abide by the terms of the agreement. The courts have the authority to ensure that this requirement is met.

Tort Law

Law of torts is the body of law that governs civil wrongs, such as harm to people or property damage. In Metaverse, the tort law concept will apply to any situation in which one user causes harm to another. It encompasses mental anguish and physical and financial loss in every sense. In the event of a violation of tort law in the virtual world, one might approach the courts in the same manner as they would in the real world.⁴⁵

Defamation Laws

Laws against defamation shield individuals and organizations from dealing with the fallout of having false and hurtful words made about them in public. The same rules will apply to users in the Metaverse, which means that you will be held responsible for your statements and activities in this digital realm if they cause unjustifiable damage to the reputation of another person or entity.⁴⁶ The Indian Penal Code, Section 499, makes it quite apparent that publishing content online to damage

⁴⁴ Rahul Hingmire, 'The Metaverse And Legal Frameworks Around It' (*Forbes India*, 26 July 2022) <<https://www.forbesindia.com/blog/legalese/the-metaverse-and-legal-frameworks-around-it/>> accessed 2 December 2022.

⁴⁵ Forbes (n 44).

⁴⁶ Forbes (n 44).

another person's reputation is considered to be the crime of defamation, which is a bailable, non-cognizable offense that can be compounded.

Information Technology Act

Chapter XI of the IT Act deals with various offenses done in electronic format and comes under the ambit of cybercrimes.⁴⁷ If any cybercrimes that are punishable as given under this chapter happen in the Metaverse, then these provisions can be utilized to deal with it.

Conclusion

Within the initial periods, the Internet has reasonably limited use, which was mostly text communication among a small group. Over time, as more people used new technologies (not just on the Internet, but in ICT in general), people started to use the Internet for more than just e-mails, music sharing, online shopping, and even live streaming. The Internet has even become a place where people in the Metaverse can share virtual reality experiences. It brought about an increase in the number of legal concerns regarding the regulation of the Internet. For instance, an increase in the potential to disseminate multimedia content via Internet sparked a conversation concerning the protection of Intellectual Property efficiently. When individuals started using online banking, all relevant stakeholders, such as banks, mobile platforms, and so on, were forced to adopt sufficient safety measures to protect customers from being victims of money fraud or other types of monetary cybercrimes. There are continuing discussions about broader legal problems, including jurisdiction, content control, and privacy.

The Metaverse, like the Internet, is a limitless phenomenon. As a result, the Metaverse would likely follow a similar trajectory in terms of technological progress and hence the legal difficulties surrounding this region. For instance, platforms within the Metaverse may accumulate substantial amounts of personal data related to individual behaviour,

⁴⁷ Pavan Duggal, 'Cybercrime 3.0' (2014) UPC168.

comparable to the significant data retained from an individual's internet search history. Similarly, purchasing property in the Metaverse may raise succession and inheritance issues. Logically, the law will need help to keep up with developing technologies. While platforms are emerging in this arena, they must guarantee those security principles built into their technology. Platforms may offer tools or default settings that are engaged to maintain personal boundaries between platform users' avatars.

Consequently, platform operators will continue to shape user experiences; therefore, keeping an eye on the worldwide legal doctrine will be vital. Since the Metaverse reflects the real world, it is just as important for those who reside in virtual space to have a sense of belonging and collaborate with others. Users of the Metaverse would likely want similar interoperability because of the ease with which people can migrate to different countries and take their belongings with them. It indicates that several different Metaverses will be compatible in the future, making it possible for users to interact with the same profile and share data across many platforms. Nevertheless, the objective must be to make the Metaverse a reliable and risk-free environment while simultaneously ensuring the progression of technology.

Self-regulation is another way through which Metaverse may be regulated. Platform operators and other stakeholders may move towards self-regulation, which will make it possible to remedy concerns identified at the architectural level. Additionally, it would call for establishing stringent platform governance standards that are crafted with the user's best interests in mind and intended to keep bad actors at bay. On the other hand, regulators need to adopt a transparent and collaborative strategy in which stakeholders' viewpoints are solicited and given due consideration. It is especially important because the field is extremely fluid, and established viewpoints on legal or policy issues or fast ad hoc solutions, might not stand the test of time.