

Metaverses as a New Challenge for Cyber Crime

"Avatars as a Model"

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Abstract: This study aims to explore the concept of the metaverse and analyze its impact on internet crimes, particularly concerning avatars and unique digital entities. The study delved into defining the metaverse and understanding its functionality, then proceeded to investigate new dimensions of internet crimes through this three-dimensional digital technology (the metaverse). It also discussed the emerging legal challenges associated with the use of virtual entities with unique statuses, such as avatars and electronic identities. In conclusion, the study emphasizes the necessity for a legal framework to regulate these aspects.

Keywords: digital law , criminal law , , metavers . Cyber Crime

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1. INTRODUCTION

In our current digital era, we have witnessed significant advancements in technology and the internet, transcending the boundaries of the physical world and entering new virtual realms that have become an integral part of our daily lives. These digital realms, known as the Metaverse or **the world beyond conventional**¹, offer a remarkable virtual environment where individuals can interact and engage with each other in ways we could only dream of in the past.

Experts describe the digital transformations in general and the Metaverse in particular as the convergence of the virtual and physical worlds at an astonishing intersection known as the Metaverse. In this realm, we find ourselves existing in two worlds simultaneously, at any time and place, enabling us to work, chat with friends, play sports, shop, and more, all simultaneously. This is a microscopic view of the impact of digital transformations on the world of the Metaverse.

If the Metaverse is one of the most well-known terms for projects in the world beyond the traditional, one prominent feature of the Metaverse is the use of virtual personas known as "avatars." Avatars mirror our digital identities and enable us to engage in semi-realistic interactions with others, participating in a wide range of activities. However, with the widespread adoption and evolution of avatars, new challenges have emerged in the realm of internet crimes.

In this context, the significance of this topic comes to the forefront. It is believed that the Metaverse and the use of avatars may open the door to new online crimes. This necessitates a precise understanding of the legal challenges associated with avatars in the Metaverse and how to effectively address them.

At the heart of this discussion lies a series of fundamental questions. Firstly, **what exactly is the Metaverse, and how does it function?**

¹ Dr. Ashraf Mohamed Zidan, Saif Al-Suwaidi, 2022 "The World Beyond Conventional, METAVERSE" Dar Al-Asala, Istanbul , p. 31.

Secondly, what are the emerging dimensions of cybercrimes within this new technological landscape? Lastly, is there a pressing need for a legal framework to regulate the use of avatars, which have become symbolic representations within the Metaverse, and if so, what might that framework look like?

To address this issue, we have chosen to adopt a descriptive-analytical methodology in this study. The purpose of this methodology is to describe and analyze the concepts related to the Metaverse and how it operates in the digital world, while also analyzing the challenges that arise from the use of avatars in the Metaverse.

In order to arrive at an answer to the aforementioned problem, we have divided the study into two main parts. The first part will cover the conceptual framework of Metaverse technology. We will examine the origins of this technology and understand how it operates, focusing on the technical aspects and core concepts associated with it. This understanding will help shed light on the overall context of the Metaverse and how this virtual world can impact the evolution of internet crimes.

The second part of the study will be dedicated to exploring the legal challenges arising from the use of virtual entities with unique status, such as avatars and electronic personalities, within the Metaverse. We will analyze how these entities interact within the digital environment and how this can raise complex legal issues .

2. The Conceptual Framework of Metaverse Technology

Metaverse technology is a concept that falls within the realm of modern digital technology, and it has garnered the interest of many individuals, companies, and institutions at present. In this conceptual framework, we will provide a definition of metaverse technology, discuss how it works, and take a look at some of the risks associated with this emerging technology.

2.1 Concept of metaverse

2.1.1 Definition of Metaverse Technology

The Metaverse is considered to be the next stage in the development of the Internet. Powered by a broad range of technologies, including virtual reality (VR), augmented reality (AR) and edge computing, it aims to enable

Metaverses as a New Challenge for Cyber Crime
"Avatars as a Model"

people around the world to access shared 3D virtual environments. Using an internet connection and specialized hardware like VR headsets or haptic suits, individuals can enter these virtual spaces via avatars, creating a sense of “**virtual presence**”.¹

According to Oxford English dictionary the term metaverse is etymologically composed of two components: meta (Greek prefix *μετα* meaning post, after or beyond - denoting change, transformation, permutation, or substitution) and universe.²

The initial usage of the term ' Metaverse:' metaverse was first used in Snow Crash, a cyberpunk genre novel published in 1992. In the novel, the metaverse is described as a virtual world that people can visit through VR devices. However, Snow Crash does not describe the metaverse as a perfect utopia that makes everyone who enters it happy. Instead, the metaverse creates its own problems, ranging from technology addiction, discrimination, violence, and harassment. Part of that problem even carried over into the real world.³

. Currently, there are many companies that are interested in developing the metaverse, ranging from game companies such as Epic Games and Tencent, to giant technology companies such as Microsoft and Facebook. So many companies are interested in the metaverse that even the definition of the metaverse itself is still not uniform. Each company seems to have a concept of an ideal metaverse. Here are some definitions of the metaverse from several well-known figures and companies⁴

Consulting company Gartner defines metaverse as “a collective virtual shared space, created by the convergence of virtually enhanced physical and digital reality. [...] A metaverse is not device-independent, nor owned by a

¹ INTERPOL TECHNOLOGY ASSESSMENT REPORT ON METAVERSE

²https://www.oed.com/dictionary/metaverse_n . **Mariusz MACIEJEWSKI** . - June 2023
Metaverse . Directorate-General for Internal Policies PE 751.222

³ Gelson Dias Santos and Valter Roesler, ‘Metaverse: Um Sistema de Telefonia IP e Mensagens Instantâneas Compatível Com SIP e SIMPLE’, ACM International Conference Proceeding Series, 192 (2006), 213–22, **Reviewed this reference at:** Muhammad Nur Ishak, Wahidin Musta’in Billah . 2022 METAVERSE: SHARIA CONTRACT LAW PERSPECTIVES. Jurnal Hukum Ekonomi Syariah Volume 4 Nomor 2 Desember . P 170

⁴ Muhammad Nur Ishak, Wahidin Musta’in Billah op ; cit. P 170

single vendor. It is an independent virtual economy, enabled by digital currencies and nonfungible tokens (NFTs). As a combinatorial innovation, metaverses require multiple technologies and trends to function. Contributing trends include virtual reality (VR), augmented reality (AR), flexible work styles, head-mounted displays (HMDs), an AR cloud, the Internet of Things (IoT), 5G, artificial intelligence (AI) and spatial computing¹

While the Greek academic Stylianos Mystakidis conveys that the metaverse is: “[...] the post-reality universe, a perpetual and persistent multiuser environment merging physical reality with digital virtuality. It is based on the convergence of technologies that enable multisensory interactions with virtual environments, digital objects and people such as virtual reality (VR) and augmented reality (AR). Hence, the Metaverse is an interconnected web of social, networked immersive environments in persistent multiuser platforms. It enables seamless embodied user communication in real-time and dynamic interactions with digital artifacts. Its first iteration was a web of virtual worlds where avatars were able to teleport among them. The contemporary iteration of the Metaverse features social, immersive VR platforms compatible with massive multiplayer online video games, open game worlds and AR collaborative spaces²

It has also been defined as is a 3D digital virtual space in which natural persons living in the real physical world can inter_act with other avatars instantly through computer operating systems with the support of big data, AI, 5G, cloud computing, blockchain, encryption algorithm, perception technology, digital twins, virtual engine and other technologies in the form of digital identity³

Or as it has been defined, "The metaverse is the convergence of ideas that have been around for a few years now: virtual reality (VR), augmented reality (AR), and blockchain technology. The metaverse implies a network

¹ Jackie Wiles, 2022 . What Is a Metaverse? And Should You Be Buying In? Available on the following website

<https://www.gartner.com/en/articles/what-is-a-metaverse>

. Mariusz MACIEJEWSKI . Op . cit . P 14

². Mariusz MACIEJEWSKI . OP , cit . P 14

³ Sun Y. 2022, On the Adjustment of the Metaverse and the Intelligent Socio-Legal Order, , Legal Research: It was referred to :Hong Wu and Wenxiang Zhang . 2023 . Digital identity, privacy security, and their legal safeguards in the Metaverse. Security and Safety, Vol. 2. P 1

of virtual environments accessed via different devices where users can interact, socialise, work, play and consume in an immersive digital setting that mirrors many of our real-world habits.¹

On the other hand, **Tim Sweeney**, the CEO and founder of Epic Games, describes the metaverse as a real-time accessible 3D social media platform. Through this platform, individuals can generate virtual content and share it with others, offering players the opportunity to influence the virtual world's socioeconomic dynamics. On the other hand, Peter Warman, CEO of Newzoo, envisions the metaverse as a space where individuals can simultaneously be fans, players, and creators. He believes that this multifaceted engagement will maximize opportunities, promoting business potential. Jesse Alton, the head of Open Metaverse, the group responsible for creating the open-source standards for the metaverse, emphasizes that the ideal metaverse should not rely on a single company's proprietary technology. Instead, it should incorporate various technologies developed by multiple interconnected companies.²

Based on the previous definitions of the metaverse, we can conclude that the metaverse is an advanced virtual environment that combines virtual reality, augmented reality, and blockchain technology. The metaverse refers to a network of virtual environments accessible through various devices, where individuals can interact, socialize, work, play, and consume in this immersive digital environment that mirrors many of our real-world habits.

2.1.2. How the Metaverse Technology Works ³

¹ **Adrián Vázquez Lázara** . Committee on Legal Affairs . European Parliament 2019-2024 . P 3

² **Shaowen Bardzell and Kalpana Shankar** . 2007. Video game technologies and virtual design: a study of virtual design teams in a metaverse. ICVR'07: Proceedings of the 2nd international conference on Virtual reality July P 607–616

³ **Joori Roh** .2021. What is the 'metaverse' and how does it work?. September 8, 2021. Available on the following website

<https://www.reuters.com/technology/what-is-metaverse-how-does-it-work-2021-09-08/>

MATT O'BRIEN AND KELVIN CHAN . EXPLAINER: What is the metaverse and how will it work? Available on the following website

<https://apnews.com/article/meta-facebook-explaining-the-metaverse-f57e01cd5739840945e89fd668b0fa27>

Chris Stokel-Walker .2022. The metaverse: What is it, will it work, and does anyone want it? p 5 Available on the following website

The metaverse is a concept that refers to a connected virtual three-dimensional world where individuals can enter and interact similarly to the real world. It relies on various technologies, including virtual reality (VR), augmented reality (AR), blockchain technology, and often requires the use of specialized devices such as VR headsets or haptic suits to achieve an immersive experience.

The workings of the metaverse include several key elements and technologies:

1. **Virtual Environments:** These are interconnected 3D environments displayed to users through devices like VR headsets. They simulate realistic locations and scenes.

Essentially, it's a world of endless, interconnected virtual communities where people can meet, work and play, using virtual reality headsets, augmented reality glasses, smartphone apps or other devices.¹

2. **Avatars:** Avatars represent users within the metaverse. Individuals can choose the appearance and look of their avatars and interact with them.
3. **Social Interaction:** Users can interact with each other in various ways within the metaverse, including voice and text chat and physical interaction.
4. **Virtual Economy:** The metaverse allows individuals to create and exchange digital assets, virtual real estate, and digital currencies within this world.
5. **Blockchain Technology:** Blockchain is used to securely record transactions and digital assets, making them tamper-proof.
6. **Augmented Reality (AR) and Virtual Reality (VR):** These technologies play a vital role in enhancing the metaverse experience by adding realistic elements to virtual environments.

<https://www.newscientist.com/article/mg25333680-800-the-metaverse-what-is-it-will-it-work-and-does-anyone-want-it/>

Suleiman Al-Malla, "Metaverse Technology Presents New Challenges in Criminal Law: A Descriptive-Analytical Study," 2023, Kuwait International College of Law Journal, Issue 14.

¹ **MATT O'BRIEN AND KELVIN CHAN** . EXPLAINER: What is the metaverse and how will it work? Available on the following website

<https://apnews.com/article/meta-facebook-explaining-the-metaverse-f57e01cd5739840945e89fd668b0fa27>

7. **Computer Technology:** The metaverse relies on high-performance computing to ensure smooth interaction.
8. **Real-World Integration:** The metaverse can be connected to the real world through the internet and smart devices.

These elements and technologies enable individuals to enter a connected virtual world where they can interact, communicate, and experience experiences similar to the real world.

2.2 New Dimensions of Cyber Crime by Metaverses

In our present age, three-dimensional digital technology, known as the Metaverse, has witnessed remarkable emergence within the realm of the internet and digital environments. The Metaverse allows individuals to interact with three-dimensional virtual worlds, engaging in unprecedented digital experiences. Alongside this exciting technology, new challenges and risks also arise. In this context, we will explore the new dimensions of cybercrime that may emerge as a result of the use of three-dimensional digital technology, or the Metaverse. We will understand how cybercrime is evolving in this context.

2.2.1 Cyber theft/deception

Social virtual worlds like Second Life offer new opportunities for cyber theft and deception due to their use of currencies that can be converted into real money. Fraudulent activities, such as selling virtual objects that do not meet agreed-upon requirements, are punishable under certain legal provisions. The internet's anonymity, including user names and avatars, makes it tempting for dishonest individuals to engage in illegal activities. Additionally, virtual object theft in these virtual worlds is a unique challenge, as these objects are immaterial pixels that can only be "taken away" through program manipulations. This behavior can be considered computer fraud or theft, depending on the context. Furthermore, cyber currencies in virtual worlds introduce a new quantitative dimension to financial crime. Metaverses that use their own currencies exchangeable for real money can become targets for money laundering. However, whether they will become central hubs for money laundering remains uncertain, as the internet already

offers ample opportunities for such activities. In summary, while metaverses may present new challenges for cybercrime and money laundering, they are not expected to fundamentally change the nature of these illegal activities¹

2.2.2 Money laundering through the metaverse

Estimates indicate that approximately \$8.6 billion worth of cryptocurrency was laundered within the metaverse in 2021, representing a significant 30% increase compared to the previous year. This trend is expected to persist as the decentralized nature of the metaverse makes it challenging to trace and monitor financial transactions due to the anonymity it offers.

To combat money laundering in the metaverse, some countries have taken proactive measures. For instance, they have incorporated non-fungible tokens (NFTs) into their anti-money laundering laws as part of their efforts. Notably, the European Union, the United States, and Japan have all implemented measures to address this issue.²

2.2.3 Virtual murder and physical assault³:

In the context of virtual environments, such as the metaverse, acts that could physically harm humans in real life cannot cause permanent damage to individuals due to the virtual nature of avatars, unless such a feature has been intentionally programmed. Any harm to avatars typically occurs through computer-related methods, like hacking. Depending on the real monetary value of an avatar, these actions can be classified as either cybercrimes or property deprivation, resembling fantasy crimes.

This discussion revolves around virtual actions that could inflict harm on real-life individuals. In existing virtual worlds, these actions are often features enabled by users or restricted to specific areas that users enter voluntarily, such as battle games in platforms like Roblox or certain areas in Second Life. Essentially, these actions resemble elements of violent video games, which are generally legal in most countries, albeit with occasionally enforced age restrictions (e.g., age ratings).

¹ **Christian Laue** . 2011, Crime Potential of Metaverses. Virtual Worlds and Criminality . P 23_24

² **Hua Xuan Qin . Yuyang Wang . Pan Hui**. 2022, Identity, Crimes, and Law Enforcement in the Metaverse .. P 5

³ *Ibidem* . PP 7 .8

Metaverses as a New Challenge for Cyber Crime
"Avatars as a Model"

If the same design principles and constraints governing existing virtual worlds are applied to the metaverse, it's possible to use the reasoning behind current laws to address these issues. However, one critical question arises: Should virtual murder or any form of physical assault facilitated through hacking (i.e., non-consensual actions) be treated solely as hacking, or should it be viewed differently due to its moral implications?

2.2.4 Cyber pornography :

"Electronic pornography in the Metaverse" refers to inappropriate sexual activities or the display of explicit sexual content within the virtual worlds available in the Metaverse. These activities may include the exhibition of explicit images or videos or the sharing of sexually explicit content within this digital environment.

It's worth noting that electronic pornography in the Metaverse is dealt with similarly to electronic pornography on the regular internet. However, this issue becomes more complex in the Metaverse environment due to its virtual and highly interactive nature. The Metaverse faces additional challenges in regulating and monitoring this type of content and protecting minors from accessing it.

This should be carefully addressed by Metaverse operators and relevant authorities to ensure that the virtual environment remains safe and suitable for everyone.¹

2.2.5 Sexual ageplay and child pornography²

Controversies have arisen in the metaverse regarding virtual child pornography, which consists of entirely computer-generated explicit sexual content featuring children. An infamous example is Second Life's Wonderland, where adult users engaged in sexual ageplay (sexual conduct with avatars resembling children), which is now prohibited in Second Life. Virtual sexual ageplay is often considered a subset of virtual child pornography, leading to divided opinions among users.

Some argue that criminalizing such actions should be avoided since

¹ **Erick J. Ramirez, Shelby Jennett**, 2023 . XR Embodiment and the Changing Nature of Sexual Harassment ; societies ; vol 13 ; ISS. . ¹ **Hua Xuan Qin . Yuyang Wang . Pan Hui**. Op, cit ; p 8

² **Hua Xuan Qin . Yuyang Wang . Pan Hui** , op,cit, p8

no real children are involved, and there's no clear link between virtual child pornography and real-world behavior. This viewpoint aligns with the laws of certain countries like the United States. Others believe that permitting virtual child pornography could satisfy potential pedophiles' desires, preventing them from harming real children. However, some argue that allowing virtual child pornography might encourage violence against real children. Several countries, including Canada and Australia, have laws that regulate virtual child pornography to some extent. Establishing a consensus on whether to criminalize virtual child pornography in the metaverse is necessary.

2 .2.6 Privacy Invasion in the Metaverse¹

Privacy invasion in the Metaverse refers to the unauthorized or intrusive access, collection, or use of personal information and data belonging to individuals who engage in activities within the virtual worlds and digital environments of the Metaverse. This invasion of privacy can take various forms, including:

1. **Data Collection:** Entities or individuals may gather users' personal information, such as their real names, contact details, or behavioral data, without their informed consent.
2. **Surveillance:** Monitoring and tracking users' activities, communications, and interactions within the Metaverse without their knowledge or consent can infringe upon their privacy.
3. **Profiling:** Creating detailed profiles of users based on their virtual behaviors, preferences, and interactions, which may be used for

¹ About Privacy and the Metaverse: See : **Maneesha Mithal** . 2022. Privacy and Cybersecurity, , **Carlos Bermejo, Pan Hui**, fe, the Metaverse and Everything: An Overview of Privacy, Ethics, and Governance in Metaverse, conference -italy, 1, Available on the following website https://www.researchgate.net/publication/359710984_Life_the_Metaverse_and_Everything_An_Overview_of_Privacy_Ethics_and_Governance_in_Metaverse **Muhd Hakeem Pg Haji Muhd Japar**, 2023 . Privacy and Security Concerns in the Metaverse, Metaverse Applications for New Business Models and Disruptive Innovation, Available on the following website https://www.researchgate.net/publication/367183323_Privacy_and_Security_Concerns_in_the_Metaverse

- targeted advertising or other purposes.
4. **Personal Information Exposure:** Unauthorized sharing or leaking of users' private information or content, such as personal messages or images, can lead to privacy breaches.
 5. **Behavioral Analysis:** Analyzing user behavior within the Metaverse to make predictions, influence decisions, or manipulate user experiences without their awareness.
 6. **Lack of Anonymity:** Failing to provide users with the option to remain anonymous or pseudonymous within the Metaverse, potentially exposing their real identities.

To address these privacy concerns in the Metaverse, there is a growing need for robust data protection regulations, user consent mechanisms, encryption technologies, and privacy-enhancing features. Privacy invasion is a significant challenge in this evolving digital landscape, and safeguarding individuals' personal data and privacy rights is essential for a secure and ethical Metaverse experience.

2.2.7 Infringement of intellectual property

Intellectual property rights can be compromised in the metaverse environment in several ways, including:

1. **Copyright Infringement:** In the metaverse, individuals can copy and distribute copyrighted content without permission, leading to violations of intellectual property rights.
2. **Trademark Violations:** Individuals can create counterfeit trademarks or imitate well-known brands in the metaverse, harming the reputation and businesses of legitimate companies.
3. **3D Object Intellectual Property Violations:** In the metaverse, individuals can copy and use 3D models of objects without permission, infringing on the intellectual property rights of designers and innovators.
4. **Digital Content Intellectual Property Infringement:** Individuals can publish and distribute digitally protected content, such as movies, music, and images, without permission.
5. **Virtual Identity Forgery:** Individuals can impersonate fake virtual

identities for fraudulent purposes or engage in illegal activities in the metaverse.

6. Exploitation of Virtual Reality and Augmented Reality Technologies: Virtual reality and augmented reality technologies can be exploited for unlawful purposes, such as espionage or manipulation of information.¹
7. Experts warn that intellectual property (IP) enforcement is a challenge in the metaverse environment. This is because it is more difficult to identify the provider that can take down infringing content, since metaverse content is distributed and replicated across decentralised networks running on Web 3.0 and blockchain-based platforms. There may therefore be issues around applicable law and jurisdiction and how to identify infringers.²

To protect intellectual property rights in the metaverse, it is essential to enforce relevant laws and regulations, raise awareness of intellectual property rights, and develop appropriate protection and monitoring technologies.

1. 3. Avatars in the metaverse: potential legal issues "Crime"

Avatars in the metaverse can potentially create various legal issues, especially concerning their legal status as either "electronic legal entities" borrowing concepts from general corporate law principles or as "digital/human personas" to be formed under a shared international metaverse law.³ However, in this article, we will discuss the potential crimes

¹ For more information, please refer to: **ERIC SOPHIR & MATTHEW HORTON**, 2022. Intellectual Property Risks in the Metaverse: Protection, Jurisdiction and Enforcement , <https://ipwatchdog.com/2022/07/18/intellectual-property-risks-metaverse-protection-jurisdiction-enforcement/id=150244/> **A.P. Zen I.M. Mira . 2023 . 1st Edition .** The legal status of metaverse law and its implementation in modern era . Sustainable Development in Creative Industries: Embracing Digital Culture for Humanities. Telkom University

² : **Tambiana Madiega, Polona Car and Maria Niestadt with Louise Van de Pol** , 2022. Metaverse Opportunities, risks and policy implications, European Parliamentary Research Service,.

³ ³ **Kostenko Oleksii. Zhuravlov Dmitro Dniprov Oleksii V Korotiuk Oksana . 2023.** METAVERSE: MODEL CRIMINAL CODE . July 2023 . Retrieved from [https://www.researchgate.net/publication/372519366 METAVERSE MODEL CRIMINAL CODE](https://www.researchgate.net/publication/372519366_METAVERSE_MODEL_CRIMINAL_CODE)

that may arise within the scope of the metaverse. Before delving into the study of these crimes, we will start by defining the concept of avatars

3.1 Concept of Avatars

3.1.1 Avatar Definition

The word "avatar" refers to a symbolic representation or virtual character used to represent a person or user within a virtual environment or digital world. This representation typically takes the form of an image, shape, or character chosen or created by the user to represent themselves within the digital environment. The purpose of using avatars is to add a personal touch to the user's experience within the virtual world and make digital interactions more distinctive and personalized.

Put simply, an Avatar is an online representation of a user. This digital identity differs from person to person and can either be static or animated¹. the avatar is also defined as a user-interactive social representation ²

For example, in online games or virtual social environments, users can create avatars that represent them and choose their features, clothing, and appearance. These avatars reflect their digital identity and are used for interacting with others and participating in activities within the virtual world. Avatars are a common means of achieving interaction and expression within

Kostenko Oleksii, Mangora V 2022. Metaverse: legal prospects of regulation application of Avatars and Artificial Intelligence . Legal scientific electronic journal 2022. Retrieved from <https://2u.pw/FpX0mXD>

Lucchetti S .2017 . Why Artificial Intelligence Will Need a Legal Personality. 2017 Retrieved from <https://lawcrossborder.com/2017/05/22/why-robots-need-a-legal-personality/>

Yogesh K Dwivedi .2023. Exploring the Darkverse: A Multi-Perspective Analysis of the Negative Societal Impacts of the Metaverse . Retrieved from <https://link.springer.com/article/10.1007/s10796-023-10400-x>

Ben Chester Cheong .2022. Avatars in the metaverse: potential legal issues and remedies . *International Cybersecurity Law Review* .

¹**Upanishad Sharma** .2022. What Is an Avatar in the Metaverse?. Available on the following website

<https://beebom.com/metaverse-avatars-explained/>

² **Chen J. Beyond** . 2022. the Metaverse: Digital Identity, NFT and Plural Regulation NFT and Pluralistic Regulation. Legal Research, , **Hong Wu, Wenxiang Zhang**, 2023 . Digital identity, privacy security, and their legal safeguards in the Metaverse, Security and Safety in the "Metaverse", Volume 2

digital environments. ¹

3.1.2 The history of avatars :The term "**avatar**" originates from the Sanskrit language in ancient India. The word "avatar" is derived from Sanskrit and simply means "descent" or "incarnation." In ancient India, the term "avatar" was used to refer to the embodiment of deities or spiritual beings in human or animal forms.

While the concept of avatars originated in the religious and cultural context of ancient India, it later became a common term in the world of technology and the internet. In the modern context, the term "avatar" refers to the symbols or digital characters that individuals use to represent themselves in virtual worlds and digital platforms.²

The term "avatar" was first used in a computer game context in the 1979 role-playing game Avatar for PLATO. However, it was in 1985, with the game Ultima IV: Quest of the Avatar, that the term "avatar" took on the meaning of an on-screen representation of the user. In Ultima IV, players were encouraged to think of the in-game character as an extension of themselves, making it one of the early examples of using "avatar" in this way within the gaming world³.

3.1.3 What Is an Avatar in the Metaverse?⁴

When the Metaverse was announced, one of its standout features was the new and improved Metaverse Avatars. An avatar in the Metaverse is essentially based on the same principle as other online avatars. An avatar in the Metaverse will be the electronic user's identity in that entire universe. Just like 2D avatars on other platforms, electronic users will be able to create and

¹ See: **Kristine L. Nowak AND Jesse Fox .2018.** Avatars and Computer-Mediated Communication: A Review of the Definitions, Uses, and Effects of Digital Representations . Review of Communication Research,

Daniel Zimmermann . Anna Wehler · Kai Kaspar.2023 . Self-representation through avatars in digital environments . springer, , Germany,

² See : Jeffrey J. Ventrella, 2018 . Virtual Body Language – The History and Future of Avatars: How Nonverbal Expression is Evolving on the Internet . Carnegie Mellon University.

³ WHAT IS AN AVATAR, REALLY? Available on the following website

<https://www.xprize.org/prizes/avatar/articles/what-is-an-avatar-really#:~:text=The%20first%20use%20of%20the,screen%20representation%20of%20the%20user.>

⁴ **Upanishad Sharma .2022 .** What Is an Avatar in the Metaverse?. Available on the following website : <https://beebom.com/metaverse-avatars-explained/>

use avatars in the Metaverse freely.

However, a significant difference here is flexibility. While some avatars are limited to a single platform, a Metaverse avatar will be able to navigate through different experiences in the entire Metaverse. So, any avatar the electronic user creates, along with its appearance, will easily transfer to different virtual worlds they visit. Therefore, the avatar becomes the electronic user's identity in the Metaverse.

Another major difference is the flexibility of Metaverse avatars. To accommodate such a wide range of uses, Meta is designing its avatars to be highly realistic. Instead of simple facial gestures to capture movement, a Metaverse avatar will replicate the entire person, including their body movements, to create a lifelike feeling of the actual person being there.

Meta is achieving this through artificial intelligence. The company studies physical movements and then trains a model using that data. This results in the model accurately predicting shoulder and elbow positions based on the location of the electronic user's headset and controllers. As a result, Metaverse avatars will be even more accurate and intuitive.

3.2 The Legal Issues Arising from Avatars crime "

In the metaverse, there's a potential for individuals to misuse their avatars for criminal activities, such as theft, harassment, or even causing harm to others' avatars leading to real-world psychological or physical distress due to the neural link between the avatar and its user.

For example, if an AI-powered avatar in the metaverse engages in criminal activities like purchasing illegal drugs and arranging deliveries in the physical world, determining criminal liability becomes challenging. Avatars and companies are not natural persons, making it difficult to assess their mental state for legal accountability. This complexity is similar to the challenges in corporate law, where corporate attribution rules have been established.

However, attributing all avatar wrongdoings to their users could undermine the separate legal identity of avatars, potentially hindering the development and adoption of metaverse technology. Alternatively, if avatars were to be held criminally liable, sanctions might include revoking their

legal status, temporary detention, or even destruction.

There may also be situations where avatars commit crimes beyond their users' control, such as when avatars are corrupted by software viruses. In such cases, the metaverse community would need to develop legal defenses to address various scenarios.

Additionally, addressing issues like sexual harassment in the metaverse is crucial, as it is a growing concern. Implementing protective tools like 'Safe Zone' to shield avatars from unwanted interactions until they exit these zones can be one way to tackle such problems.¹

4. CONCLUSION

Based on the information presented, it is clear that the metaverse presents new and exciting challenges for internet crimes, with avatars playing a prominent role in this context. These avatars represent the depths of this digital world and how we interact and express ourselves within it.

The study has yielded several key findings:

1. The term "metaverse" linguistically derives from the combination of two elements: "meta" (a Greek prefix signifying "post," "after," or "beyond," implying change, transformation, permutation, or substitution) and "universe."
2. In the metaverse, avatars and their users can engage in new and advanced forms of cybercrimes, including privacy breaches, digital fraud, and virtual sexual harassment. These crimes are characterized by their complexities and challenges in tracing the perpetrators.
3. Legal issues related to avatars, especially in cases involving the theft of assets owned by another avatar through deception or harassment of another avatar, may also encompass situations where avatars are held accountable for crimes beyond the control of the natural person. For example, when an avatar is compromised by a software virus in the metaverse, causing it to commit a crime. The issue of sexual harassment is equally relevant in the digital world as it is in the physical world, with a concerning number of reported cases in the

¹ **Ben Chester Cheong** . 2022 . Avatars in the metaverse: potential legal issues and remedies . International Cybersecurity Law Review . . P 488

metaverse.

Based on these conclusions, we propose several recommendations:

1. **Enhancing International Cooperation:** The international community and legal institutions must collaborate on both a global and regional scale to address the challenges posed by internet crimes in the metaverse and establish regulatory and legal measures.
2. **Establishing a Legal Framework:** There is an urgent need to create a new legal framework that defines the rights and responsibilities of avatars and their users in the metaverse. This framework should be balanced and equitable, protecting the rights of users and innovators.
3. **Advancing Identity Verification Security:** Identity verification technologies in the metaverse should be developed to combat internet crimes and ensure the safety and credibility of users.
4. **Promoting Awareness:** Increasing awareness of the dangers of internet crimes in the metaverse and preventive measures should be achieved through awareness campaigns and educational initiatives.
5. **Research and Development Support:** Supporting research and development efforts in the field of digital security to advance advanced technologies for safeguarding the metaverse and its users.

In summary, we must prepare for the future and understand that the metaverse and avatars can be a positive force if approached with caution and legal awareness. This contributes to the development of this digital world, making it a safe and thriving space for everyone.

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