
REGULATING INNOVATION: ADDRESSING THE POTENTIAL THREATS OF NFT AND METAVERSE ON INTELLECTUAL PROPERTY RIGHTS

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ABSTRACT

In recent years, technological advancements have brought forth significant innovations in various sectors, including the realm of intellectual property. Notable among these innovations are Non-Fungible Tokens (NFTs) and the virtual universe (Metaverse). While these innovations offer new opportunities for intellectual property creators, they also pose potential threats to the ownership of intellectual assets. This article presents a normative legal research, descriptive in nature and based on primary and secondary literature. The gathered data is analyzed using a qualitative method, incorporating statute and conceptual approaches, as well as comparative analysis. The study aims to analyze how regulations can respond to these innovations, highlighting potential threats related to intellectual property infringement, identity theft, privacy, and money laundering. It also explores legal protection efforts for intellectual assets found in NFTs and Metaverse in line with existing regulations, community guidelines, and collaboration with various stakeholders.

Keywords : intellectual property, legal protection, metaverse, non-fungible tokens (NFT).

A. Introduction

The contemporary world is witnessing a continuous wave of technological innovation. A prominent example of such innovation is the emergence of Non-Fungible Tokens (NFTs) and the Metaverse. An empirical illustration of their impact is the case of Ghozali Everyday, which gained significant attention in early 2022. A student named Sultan Gustaf Al Ghozali unexpectedly became a billionaire by selling a series of his selfies in the form of NFTs, generating approximately Rp1.7 billion in revenue. Ghozali commenced selling his selfies on January 10, 2022, at a price of around Rp48,000 per photo. On the first day, 33 photos were sold, and on the second day, his entire collection of 933 selfies was sold out. Interestingly, on the third day, Ghozali's photos were being resold on the secondary market at prices as low as Rp13.3 million per photo.¹ This success marked a pivotal moment in

1 Widiawardana, Pramaseto, and Rianda Dirkareshza. "Hak Cipta Aset NFT (Non-Fungible Token): Ancaman Nyata Bagi Seniman." *Ganaya: Jurnal Ilmu Sosial dan Humaniora* 6, no. 3 (2023): 631-640. DOI:[10.37303/a.v25i1.316](https://doi.org/10.37303/a.v25i1.316)

popularizing NFTs in Indonesia.

Teguh Kurniawan Harmanda, Chairman of the Indonesian Crypto Asset Traders Association (Aspakrindo), predicted that the NFT phenomenon would continue to grow as a significant trend, driven by increasing public awareness of the benefits and growth opportunities in the creative and digital economy sectors.² The popularity of NFTs has been steadily rising in recent times, with considerable interest from investors and collectors worldwide, allocating substantial financial resources to access NFTs on the blockchain network.³

The emergence of NFTs is an innovation that was foreshadowed by the sixth-century BC Greek philosopher Parmenides, who postulated that “nothing comes from nothing.” In the digital age, unprecedented phenomena periodically emerge, seemingly from “nothing,” yet they have the potential to reshape the world and the laws that govern it.⁴ Just as in recent years, we witnessed the advent of Web 2.0, followed by Cloud Computing, Blockchain, Web 3.0, and now the Metaverse.⁵

Regarding the Metaverse, it gained significant attention when Facebook’s CEO, Mark Zuckerberg, took a major step by renaming Facebook to Meta, signifying a focus on Metaverse development.⁶ The term “Meta” is of Greek origin, meaning “after,” “together with,” “among,” or “behind,” while “Verse” is an abbreviation for “Universe.”⁷ The Metaverse technology bridges the virtual and physical worlds, integrating internet technology with social media, thus representing a substantial digital technology innovation.⁸

The term “metaverse” was first introduced by Neal Stephenson in his novel titled “Snow Crash” in 1992. In this novel, Stephenson depicts the metaverse as a virtual environment closely interconnected with the real world, where users interact through digital avatars. The metaverse presents virtual technology in a three-dimensional (3D) format, enabling users to engage in a variety of activities virtually by using avatars that create an interaction experience similar to the physical world. The emergence of the metaverse promises significant changes in how we interact, conduct business, and access information in the

2 <https://katadata.co.id/desysetyowati/digital/622b35467c0c8/bappebti-butuh-waktu-mengatur-nft-meski-perdagangannya-kian-marak>, accessed at 27 Agustus 2023, 07.20 WIB.

3 <https://databoks.katadata.co.id/datapublish/2021/12/31/deretan-nft-termahal-di-dunia-ada-yang-mencapai-rp-13-triliun>, accessed at 27 Agustus 2023, 07.31 WIB.

4 Andy Ramos, “The metaverse, NFTs and IP Rights: to regulate or not to regulate?.” In *Intellectual Property Forum: journal of the Intellectual and Industrial Property Society of Australia and New Zealand*, no. 129, pp. 76-78. Melbourne, Vic.: Intellectual and Industrial Property Society of Australia and New Zealand Inc, 2022., <https://search.informit.org/doi/10.3316/informit.876750161553999>

5 *Ibid.*

6 Indria Sukma Sektiyaningsih, “Tren Nft Dan Defi Dalam Bisnis Di Era Metaverse.” *JMBA Jurnal Manajemen dan Bisnis* 8, no. 02 (2022): 22-30., <http://journal.ibmasmi.ac.id/index.php/JMBA/article/view/493/332>

7 Alexander Sugiharto, Muhammad Yusuf Musa, and Mochamad James Falahuddin. *NFT & Metaverse: Blockchain, Dunia Virtual & Regulasi*. (Jakarta: Indonesian Legal Study for Crypto Asset and Blockchain, 2022.), 45.

8 Indria Sukma Sektiyaningsih, *Op.Cit.*

continually evolving digital era.⁹

The relationship between the Metaverse and NFTs lies in their common use of blockchain technology. Through blockchain technology, various services can be provided, including identity verification without authorization, high-speed exchange processes, and financial services. The Metaverse concept holds great potential for enhancing business activities in the future. This explains the increasing popularity of NFTs in the business context within the current Metaverse era, attracting a wide range of individuals, not only celebrities but also businesses.¹⁰

However, besides the positive impacts, NFTs and Metaverse also bring negative consequences, stemming from various causes such as a lack of regulation, ethical boundaries in transactions, and more. Reports on social media have indicated that non-digital (traditional) art has been transformed into NFTs without the permission of the copyright holders. Their artwork has appeared on various NFT marketplaces without consent.¹¹ Even outside Indonesia, on one of the largest NFT marketplaces, OpenSea, it was found that eighty percent of NFTs created using free minting tools were results of plagiarism and forgery.¹² Additionally, the case of Emmanuel Masmajejan, an orthopedic surgeon at the Georges Pompidou European Hospital in Paris, France, reflects the potential serious legal consequences. Masmajejan faced legal threats for allegedly selling X-ray images of his patients as NFTs on the OpenSea platform.¹³

Given the rapid pace of technological innovation, this study is essential to examine NFTs and the Metaverse. This article will investigate to: What extent the current legal framework on intellectual property rights have been able to respond the challenges posed by NFT and Metaverse? The urgency of this research becomes evident when we consider how the law must respond to the swift evolution of technology, frequently intertwined with new discoveries (innovations). Thus, it is essential to investigate the relationship between regulations and innovation, particularly within the Indonesian legal landscape, to ensure it remains responsive to various challenges and needs.

In the realm of examining the impact of NFTs and the Metaverse on Intellectual Property Rights, our research stands out in its comprehensive exploration of regulatory strategies. Previous studies have touched upon related aspects, but our work distinguishes

9 *Ibid.*

10 Read more at Kompas.com 8" Selebritas Dunia yang Ikut Terjun ke Dunia NFT dan Metaverse." <https://lifestyle.kompas.com/read/2022/01/07/082655820/8-selebritas-dunia-yang-ikut-terjun-ke-dunia-nft-dan-metaverse?page=all>, Liputan6.com, "Potensi NFT dan Metaverse di Indonesia Menarik Minat Artis" <https://www.liputan6.com/crypto/read/4932824/potensi-nft-dan-metaverse-di-indonesia-menarik-minat-artis>, hybrid.co.id, "Asus Luncurkan Platform NFT Sebagai Langkah Awal Wujudkan Visi Metaverse," <https://hybrid.co.id/post/platform-nft-asus-art-black-hole-metaverse> accessed at 28 Agustus 2023.

11 Yenny Permata Liegestu and David Tan. „Perlindungan Hak Cipta Terhadap Aset Digital NFT.“ Maleo Law Journal 6, no. 2 (2022): 127-141. <https://jurnal.unismuhpalu.ac.id/index.php/MLJ/article/view/2269>, 129.

12 *Ibid.*

13 <https://tekno.kompas.com/read/2022/02/02/14310067/dokter-bedah-digugat-gara-gara-jual-nft-foto-x-ray-pasien>, accessed at 27 Agustus 2023, 07.48 WIB.

itself by providing an extensive analysis of the evolving landscape and proposing specific regulatory measures to mitigate potential threats. Unlike prior research which may have briefly discussed certain implications, our study delves deeper, offering detailed insights into the complexities and challenges presented by the intersection of NFTs, Metaverse, and Intellectual Property Rights. While existing literature touches upon the subject, our work contributes a nuanced and in-depth understanding, serving as a guide for policymakers and stakeholders navigating this rapidly evolving domain.

B. Research Method

The research methodology applied in this study is a normative juridical method characterized as descriptive-analytical. The normative juridical method is a research approach used to analyze knowledge based on legal regulations and existing legal concepts. The study employs both primary and secondary legal materials, which are then comprehensively analyzed and evaluated.¹⁴

Various documents, including legislative regulations, scholarly articles related to NFTs, the Metaverse, legal protection, intellectual property rights, legal responsiveness, and other relevant topics, have been collected and utilized as the primary reference materials for this research. Substantively, the research is descriptive in nature, necessitating the gathering of relevant data to depict the phenomena under investigation. The collected data is analyzed using qualitative methods, involving statute and conceptual approaches, as well as comparative analysis. This enables the research to address existing challenges and provide solutions to the identified problems.

C. Discussions

1. Understanding NFT and Metaverse Technology Innovation

Before delving deeper, it's essential to examine NFT in detail. NFTs can be considered tokens containing content created by their creators.¹⁵ These tokens are stored on the blockchain, and they cannot be replicated; only NFT holders have the authority to allow their transfer.¹⁶ On the other hand, tokens can be broadly categorized into fungible and non-fungible tokens (NFTs).¹⁷ Fungible tokens are interchangeable with each other, while NFTs are unique and cannot be exchanged for other tokens.

14 Peter Mahmud Marzuki. *Penelitian Hukum*, (Jakarta : Kencana Prenada Media Group, 2015), 55.

15 Deloitte, "Corporates Using NFTs; How NFTs Might Fit your Business and to Watch for." 2022. <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/audit/us-corporates-using-nfts-how-nfts-might-fit-your-business-pov.pdf>

16 *Ibid.*

17 Jiajing Wu, Kaixin Lin, Dan Lin, Ziyue Zheng, Huawei Huang, and Zibin Zheng. "Financial Crimes in Web3-empowered Metaverse: Taxonomy, Countermeasures, and Opportunities." *IEEE Open Journal of the Computer Society* 4 (2023): 37-49. DOI: 10.1109/OJCS.2023.3245801

The term NFT in Indonesian can be referred to as “token” and is stored in a technology called blockchain,¹⁸ which acts as a public ledger that records all transactions and is stored in a chain of blocks.¹⁹ Blockchain²⁰ offers decentralization, data integrity, anonymity, and auditability. NFT ownership is recorded in the blockchain, enabling the transfer and sale of NFTs. NFTs typically reference digital files such as images, videos, or audio. Each NFT has a unique identifier, as seen in art NFTs.²¹ However, it’s important to note that NFTs differ from cryptocurrencies, which can be directly traded as digital assets. Unlike many other digital items that can be reproduced infinitely, each NFT possesses unique characteristics, and its authenticity and ownership can only be verified through the blockchain where the NFT is stored.

a. Development of NFT and Metaverse

The early development of NFTs can be traced back to a concept that emerged in the early years of 2012. During this time, a paper authored by Meni Rosenfield introduced the idea of “Colored Coins” associated with the Bitcoin blockchain. The concept of colored coins aimed to provide a method for representing and managing real-world assets within the blockchain to prove ownership of those assets. This concept is similar to conventional Bitcoin but incorporates an additional “token” element, offering specific attributes and unique characteristics to each asset, making them distinct from one another.²² Then, on May 3, 2014, digital artist Kevin McCoy minted the first NFT known as “Quantum”²³ using the Namecoin blockchain. Following this event, various experiments and developments were conducted, and several platforms were built on the Bitcoin blockchain to support the growth of NFTs.²⁴

Subsequently, 2017 marked a crucial turning point in the development of NFTs with the adoption of the Ethereum platform. This was supported by the introduction of a set of token standards that allowed developers to create tokens in a more flexible manner.²⁵ These tokens represent digital assets issued on a specific blockchain, such as Ethereum,

18 Michael Angelo and Nyoman Satyayudha Dananjaya. "Perlindungan Non-Fungible Token Art: Inovasi Karya Cipta Perspektif Hak Cipta." *Jurnal Magister Hukum Udayana* 11, no. 3 (2022): 629-642. Doi: <https://doi.org/10.24843/JMHU.2022.v11.i03.p11>.

19 Zibin Zheng, Shaoan Xie, Hong-Ning Dai, Xiangping Chen, and Huaimin Wang. "Blockchain challenges and opportunities: A survey." *International journal of web and grid services* 14, no. 4 (2018): 352-375. <https://doi.org/10.1504/IJWGS.2018.095647>

20 Blockchain technology can operate within a decentralized environment, made possible through the integration of several core technologies such as hash cryptography, digital signatures (based on asymmetric cryptography), and distributed consensus mechanisms. For further explanations, you can refer to Zibin Zheng, Shaoan Xie, Hong-Ning Dai, Xiangping Chen, and Huaimin Wang, *Ibid*.

21 Deloitte, *Op.Cit*.

22 Michael Angelo and Nyoman Satyayudha Dananjaya. *Op.Cit.*, 630.

23 ""Quantum" is an octagonal-shaped digital image featuring color-changing and pulsating effects. The image gives the impression of resembling a marine creature, specifically an octopus, when observed. For more details, read further in Tiana Laurence, *NFTs for Dummies* (Hoboken: John Wiley & Sons, 2022), 12.

24 Michael Angelo and Nyoman Satyayudha Dananjaya. *Op. Cit.*, 630.

25 Tiana Laurence, *Op. Cit.*, 12.

Bitcoin, or Solana. The purpose of creating these tokens is to identify ownership of the NFT digital artworks, enabling clear identification of the owner. As for 2021, it was a monumental year for NFTs, with a significant explosion in their supply and demand. This surge can be attributed in part to a digital artist named Mike Winkelmann, known as the owner of the "Beeple Everyday" NFT. He achieved a remarkable income of \$69 million from the sale of his NFT art in an auction. Mike Winkelmann's success in selling his work as NFT became one of the main drivers of NFT popularity and growth that year.²⁶

Meanwhile, in Indonesia, the popularity of NFTs skyrocketed after the owner of the Ghozali Everyday account on one of the largest NFT trading platforms, OpenSea, went viral on social media. This excitement was triggered by the fact that Ghozali Everyday managed to earn an income of 1.7 billion Indonesian Rupiah by selling selfies. A student named Sultan Gustaf Al Ghozali became a sudden billionaire. He achieved this success by selling some of his selfie photos in the form of NFTs, generating an income of approximately 48,000 Rupiah per photo.²⁷ Ghozali's success garnered attention in the Indonesian NFT scene and inspired many individuals to become involved in NFTs.

As for the Metaverse, it is a concept of a virtual world in the future, also known as Web 3.0, intended to complement or even potentially replace the Web 2.0-based internet we use in our daily lives. The Metaverse provides a virtual space that allows users to engage in various activities, including the purchase of digital assets like virtual land, buildings, and artwork.²⁸

The Metaverse enables individuals to interact in a virtual world using digital technology. However, recent developments have transformed the Metaverse into an investment vehicle for entrepreneurs. Some major tech companies have spent tens of billions of dollars acquiring global gaming brands, while others have invested billions in research and development of Metaverse technology and infrastructure. Additionally, investors and entrepreneurs have spent millions to buy digital land within the Metaverse to create virtual business spaces, where consumers can buy and sell goods, services, host events, and art exhibitions.²⁹

The development of the Metaverse has been a phenomenal breakthrough for NFTs, which serve as digital assets within the Metaverse. One well-known Metaverse project is Decentraland, which was initiated by two individuals from Argentina, Ari Meilich and Esteban Ordano, starting in late 2015.³⁰ As such, the relationship between NFTs and the Metaverse

26 Michael Angelo and Nyoman Satyayudha Dananjaya. *Op.Cit.*, 631.

27 Widiawardana, Pramaseto, and Rianda Dirkareshza. *Op.Cit.*

28 Maya Ruhtiani, Yuris Tri Naili, Hesti Ayu Wahyuni, and Purwono Purwono. "Perlindungan Aset Digital Pada Era Metaverse Dalam Perspektif Hukum Positif Di Indonesia." *Literasi Hukum* 6, no. 2 (2022): 28-39. <https://jurnal.untidar.ac.id/index.php/literasihukum/article/view/6804>, 31

29 Maya Ruhtiani, Yuris Tri Naili, Hesti Ayu Wahyuni, and Purwono Purwono. "Perlindungan Aset Digital Pada Era Metaverse Dalam Perspektif Hukum Positif Di Indonesia." *Literasi Hukum* 6, no. 2 (2022): 28-39. <https://jurnal.untidar.ac.id/index.php/literasihukum/article/view/6804>

30 Alexander Sugiharto, Muhammad Yusuf Musa, and Mochamad James Falahuddin. *NFT & Metaverse: Blockchain, Dunia Virtual & Regulasi*. (Jakarta: Indonesian Legal Study for Crypto Asset and Blockchain,

is closely intertwined. The sustainability of NFTs is also influenced by the Metaverse. An individual who owns NFTs will possess valuable assets in the digital environment, equivalent to owning valuable assets or goods in the physical world. NFTs have a wide range of applications, including collecting and trading digital assets such as art, music, and images, issuing online event tickets, selling items within the Metaverse games, or even serving as proof of ownership for an asset, like a land ownership certificate.³¹

b. The Minting Process for NFTs

The process of transforming a work into an NFT, known as “minting,” is an essential step in translating an object onto the blockchain. In recent developments, various platforms and tutorials have become easily accessible on the internet to assist with the minting process.³² Furthermore, platforms like OpenSea offer a “lazy minting” option,³³ significantly simplifying the conversion of existing works into NFTs. The minting process for NFTs, especially on platforms like OpenSea, is a crucial step in converting digital assets into NFTs.

Here are the steps in the NFT minting process on OpenSea:

- 1) **Prepare Digital Asset:** The first step is to prepare the digital asset that you want to convert into an NFT. This can be an image, video, audio, or any other type of digital asset.
- 2) **Access Minting Platform:** Visit an NFT platform like OpenSea and create an account if you don't already have one.
- 3) **Connect Crypto Wallet:** To perform minting, you'll need to connect your crypto wallet to the platform. This allows you to manage the NFTs you've minted. OpenSea supports several crypto wallets, such as MetaMask.
- 4) **Minting the Asset:** Once you're connected, you'll have the option to start the minting process. Select the digital asset you want to turn into an NFT. You'll need to upload this asset to the platform.
- 5) **NFT Configuration:** You will be prompted to provide information about the NFT, including a title, description, and other attributes. You can also specify whether the NFT will have a limited edition or not.

2022.), 11.

31 *Ibid.*, 13-17.

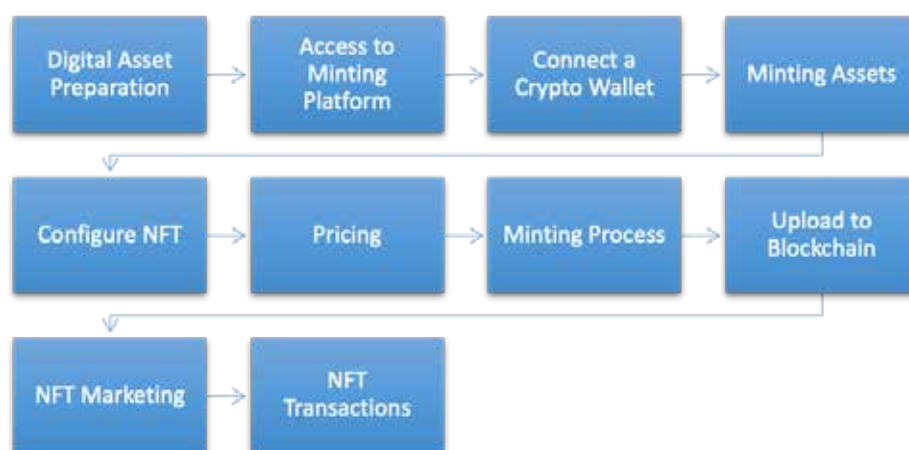
32 Tanusree Sharma, Zhixuan Zhou, Yun Huang, and Yang Wang. "It's A Blessing and A Curse": Unpacking Creators' Practices with Non-Fungible Tokens (NFTs) and Their Communities." arXiv preprint arXiv:2201.13233 (2022). <https://doi.org/10.48550/arXiv.2201.13233>

33 "Lazy minting" refers to a feature that allows the creation of NFTs outside of the blockchain or "off-chain," and the NFT will only be generated when there is a sales transaction for that NFT. This means that NFT creators do not need to pay gas fees upfront as compensation for the computational power required for the NFT creation process on the blockchain. In lazy minting mode, the cost of creating the NFT is borne by the buyer along with the purchase price. For further information, read more in Ranti Fauza Mayana, Tisni Santika, Moh Alvi Pratama, and Ayyu Wulandari. "Intellectual Property Development & Komersialisasi Non-Fungible Token (NFT): Peluang, Tantangan dan Problematika Hukum Dalam Praktik." ACTA DIURNAL Jurnal Ilmu Hukum Kenotariatan 5, no. 2 (2022): 202-220. <https://doi.org/10.23920/acta.v5i2.812>

- 6) **Set the Price:** You can set a price for your NFT in cryptocurrency, such as Ethereum (ETH). This is the price that buyers will need to pay if they want to purchase your NFT.
- 7) **Minting Process:** After you've finished configuring the NFT and setting its price, you can start the minting process. This will convert your digital asset into an NFT and record it on the blockchain used by the platform (e.g., the Ethereum blockchain).
- 8) **Upload to Blockchain:** This process may take a moment as your digital asset is uploaded to the blockchain. Once completed, your NFT will be available for sale on the platform.
- 9) **NFT Marketing:** Once your NFT is listed, you can promote it to collectors and potential buyers on the NFT platform and on social media.
- 10) **NFT Transactions:** If there are interested buyers, they can purchase your NFT at the price you've set. This transaction will be recorded on the blockchain, and you will receive payment in cryptocurrency.

The NFT minting process allows artists and content creators to turn their digital works into tradable assets on the NFT market. During this process, NFT metadata is also recorded on the blockchain, capturing information about ownership and transaction history of the NFT. In simple terms, this can be visualized using the flowchart below:

Figure 1. the process of minting NFT on OpenSea



Source: compiled by author

2. The Potential and Threats of NFTs and Metaverse

a. Potential of NFTs and Metaverse

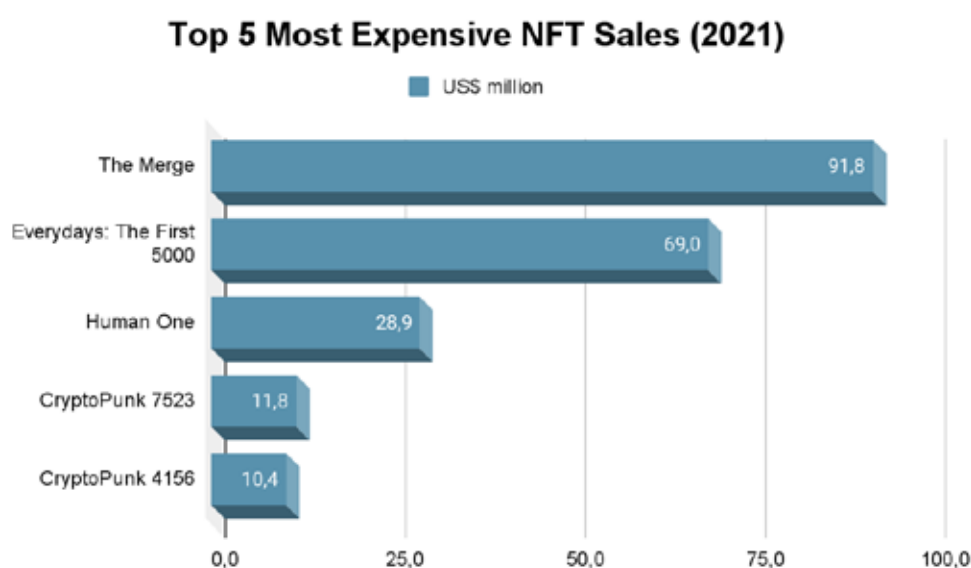
As of the end of 2021, the most valuable NFT in the world was a digital artwork known as “The Merge,” which was valued at approximately \$91.8 million or around IDR 1.3 trillion, based on an exchange rate of IDR 14,280 per US dollar. “The Merge” was created by an anonymous artist known as Pak, and this achievement demonstrated the ability of NFTs to

be traded very quickly in the market. Following “The Merge,” the next highest-priced NFT was “Everydays: The First 5000,” which sold for \$69 million or approximately IDR 985.35 billion. Other NFTs also achieved remarkable sales values, such as “NFT Human One” and “CryptoPunk 7523,” which were traded for \$28.9 million (IDR 412.7 billion) and \$11.75 million (IDR 167.8 billion), respectively. “CryptoPunk 4156” was also sold for a price of \$10.35 million (IDR 147.8 billion).³⁴

The potential of NFTs for local artists is also significant. It enables art groups, including village artists, to benefit from their works through NFTs. Through NFTs, these artworks can be digitally sold and reach potential buyers worldwide. This opens the door for local artists to gain greater international exposure and increase their income potential from their art. Furthermore, NFTs also offer the possibility for artists to maintain control over intellectual property ownership and receive royalties from their works, providing long-term benefits. Therefore, NFTs can empower local artists and art communities in various locations, changing the way they market and generate income from their art in the evolving digital era.³⁵

For a clearer view, you can refer to the graph below:

Figure 2. Top 5 Most Expensive NFT Sales (2021)



Source: Businessinsider

34 <https://www.businessinsider.in/investment/news/15-most-expensive-nfts-of-2021-by-pak-beeple-cryptopunks-and-others/slidelist/88540923.cms#slideid=88541111>, accessed at 27 Agustus 2023, 07.40 WIB.

35 Read further at Ni Wayan Mega Sari Apri Yani, I Made Trisna Semara, Putu Eka Wirawan, “NFT Membangun Desa Digital Untuk Kelompok Seni Lukis “Young Artist” Di Desa Wisata Sayan, Kabupaten Gianyar, *E-Amal: Jurnal Pengabdian Kepada Masyarakat* 3, no. 1 (2023): 35-40. <https://doi.org/10.47492/eamal.v3i1.2403> dan tulisan Aryasatya Rafa Prayitno, Luthfi Baihaqi Riziq, Rizqi Vazrin, Caroline Natasha Amartya Wawor, Janaka Isnain Daru, “Peluang Non-Fungible Token Sebagai Media Apresiasi Seniman Lokal Bandung.” *Jurnal Lentera Bisnis* 12, no. 1 (2023): 93-100. DOI:[10.34127/jrlab.v12i1.655](https://doi.org/10.34127/jrlab.v12i1.655)

Meanwhile, the potential of the Metaverse for businesses is significant in terms of adapting business models and enhancing operational capacity. This transformation has a significant impact on various sectors such as marketing, tourism, entertainment, hospitality, citizen-government interactions, healthcare, education, and social networking.³⁶ For individuals choosing to participate in the Metaverse in the future, the seamless transition between the physical and virtual worlds, along with improvements in multi-modal experiences and interactions, opens up seemingly limitless possibilities.³⁷

A significant step taken by the Indonesian government is the official announcement in July 2023 by the Ministry of Trade (Kemendag) and the Commodity Futures Trading Regulatory Agency (Bappebti) regarding the establishment of the first cryptocurrency exchange in Indonesia. The establishment of this crypto exchange was confirmed through Bappebti Head Decision No. 01/BAPPEBTI/SP-BBAK/07/2023 issued on July 17, 2023. This demonstrates the government's recognition of the growing importance of cryptocurrencies and blockchain technology.³⁸

b. Threats and Risks of NFTs and Metaverse

At least there are several threats and risks associated with NFTs and the Metaverse, including but not limited to the following:

1) Intellectual Property Infringement

Threats related to intellectual property can manifest in terms of copyright infringement, trademark violations, and infringements on industrial designs, which can become issues in the Metaverse. This concerns digital assets that are sold and used to create avatars in the Metaverse. Industrial design encompasses various elements such as shape, configuration, line composition, color, and combinations of these elements.

2) Identity Theft and Privacy

Identity theft threats in the Metaverse are severe and can be more destructive than real-world identity theft. Stolen Metaverse user identities can lead to the exploitation of various aspects of their digital lives, including digital assets, avatars, social connections, and online activities. Information regarding users' locations, behaviors, lifestyles, data perceptions, transmission processes, management, and storage can be discerned within the Metaverse. Additionally, the creation of a user's Metaverse avatar relies on facial expressions, eye and hand movements, speech, biometric attributes, and brainwave patterns. These elements can all potentially be susceptible

36 Yogesh K. Dwivedi, Laurie Hughes, Abdullah M. Baabdullah, et al. "Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy." *International Journal of Information Management* 66 (2022): 102542. <https://doi.org/10.1016/j.ijinfomgt.2022.102542>

37 Ellysse Dick. *Public policy for the metaverse: Key takeaways from the 2021 AR/VR policy conference*. Information Technology and Innovation Foundation, 2021.

38 <https://indonesia.go.id/kategori/indonesia-dalam-angka/7312/bursa-kripto-untuk-ekosistem-transaksi-yang-aman?lang=1>, accessed at 29 Agustus 2023.

to hacker attacks, including personal data collected through XR devices like headsets, transmitted through various communication channels, both wired and wireless. Despite encryption, advanced techniques like differential attacks and inference attacks may be used by hackers to trace a user's whereabouts.³⁹

3) Money Laundering

The growth of NFTs can also impact threats to decentralized finance. There is a potential that, with increased awareness and Metaverse adoption, criminals may attempt to use the Metaverse as a channel for laundering money obtained from illegal activities.⁴⁰ These assets can originate from real-world activities or other crypto-based criminal actions, and criminals may try to conceal their origins by converting them into Metaverse-based assets such as virtual land, items for use in the Metaverse, or other crypto assets.⁴¹

3. Legal Responses to the Potential Threats of NFT and Metaverse on Intellectual Property

Change is an inevitability. It occurs due to shifts in the circumstances and conditions, evolving the past into the present, often accompanied by advancements. This reality extends not only to technology but also demands a transformation in the legal domain to effectively respond to these changes.

a. Regulation of Intellectual Property

The concept of intellectual property rights originates from Anglo-Saxon legal traditions, rooted in strong moral principles that connect creators to their work. These morals are based on the close relationship between the creator and their creative output. Intellectual property hinges on the creative abilities and ingenuity of the creators. Consequently, appropriating someone's creative work without fair compensation is considered unethical and irresponsible.⁴²

This moral foundation is known as the philosophical basis of natural law in legal theory. This principle prohibits the unlawful acquisition of what rightfully belongs to others. In the context of intellectual property rights, this means that copyrights, patents, and other forms of intellectual property are granted to creators as a reward for their creative efforts, and to incentivize them to keep creating. By acknowledging intellectual property rights, the legal

39 Maya Ruhtiani, Yuris Tri Naili, Hesti Ayu Wahyuni, and Purwono Purwono. *Op.Cit.*, 32.

40 Read more about the potential financial crimes in Jiajing Wu, Kaixin Lin, Dan Lin, Ziyi Zheng, Huawei Huang, and Zibin Zheng. "Financial Crimes in Web3-empowered Metaverse: Taxonomy, Countermeasures, and Opportunities." *IEEE Open Journal of the Computer Society* 4 (2023): 37-49. DOI: 10.1109/OJCS.2023.3245801

41 Tara Anison, "The Future of Financial Crime in the Metaverse." (2022). Accessed from www.elliptic.co/hubfs/Crime%20in%20the%20Metaverse%202022%20final.pdf

42 Nita Triana, "Menggagas Hak Kekayaan Intelektual Perspektif Hukum Islam ke dalam Hukum Nasional." *Al-Manahij: Jurnal Kajian Hukum Islam* 12, no. 2 (2018): 177-192. DOI: <https://doi.org/10.24090/mnh.v12i2.1747>, 179.

system safeguards the moral rights of creators and provides a legal framework for fair use and compensation for these creations.⁴³

The scope of protected creative work encompasses various forms, including literary, artistic, and scientific creations.⁴⁴ These creations originate from an individual's thoughts, imagination, skills, agility, and expertise, which are then manifested in a perceivable, audible, or tangible form. Thus, creative works can be collectively enjoyed as the products of one's ingenuity.⁴⁵

Intellectual property rights play a significant role in protecting the rights of creators and innovators, promoting innovation and creativity, and facilitating international trade. Organizations such as the World Trade Organization (WTO) play a part in promoting and safeguarding intellectual property rights globally to ensure that creators and innovators receive recognition and fair compensation for their works. The importance of intellectual property rights cannot be separated from the context of global trade globalization, reflected in international conventions and the establishment of global trade organizations such as the WTO. The concept of intellectual property rights includes several crucial aspects:⁴⁶

1) **Ownership Rights**

These rights are related to the ownership of intellectual creations. They are inherent to their owners, permanent, and exclusive, meaning that only the owners possess exclusive rights over the work.

2) **Rights Granted to Others with Owner's Permission**

In addition to ownership rights, the concept of intellectual property rights also encompasses rights granted to others with the owner's permission. These rights are temporary and include the right to disclose, reproduce, exploit specific products, or produce certain goods. Rights holders can grant permission to others to use or exploit their works within the framework of agreements or licenses.

Globally, intellectual property rights can be categorized into two main domains:⁴⁷

1) **Industrial Rights**, This domain includes various types of rights related to industry and innovation. It comprises:

a) **Patents**, Providing the owner with exclusive rights to produce, use, and sell an innovation or invention for a specific period.

b) **Trade Secrets**, Referring to valuable and secret information held by a company or entity, such as concealed chemical formulas or secret production techniques.

43 *Ibid.*

44 Ni Nyoman Dianita Pramesti and I Ketut Westra, "Perlindungan Karakter Anime Berdasarkan Undang-Undang Hak Cipta," *Jurnal Magister Hukum Udayana* 10, no. 1 (2021): 79-90, <https://doi.org/10.24843/jmhu.2021.v10.i01.p7>.

45 Michael Angelo and Nyoman Satyayudha Dananjaya. *Op.Cit.*, 633.

46 Sulasi Rongiyati, "Hak Kekayaan Intelektual Atas Pengetahuan Tradisional." *Negara Hukum: Membangun Hukum untuk Keadilan dan Kesejahteraan* 2, no. 2 (2016): 213-238, DOI: 0.22212/jnh.v2i2.214

47 *Ibid.*

- c) **Trademark**, Protecting the brand identity or logo of a product or service, ensuring that others cannot use a similar brand to deceive consumers.
- d) **Industrial Design**, Involves protecting aspects of a product's design that provide commercial or aesthetic advantages.
- e) **Plant Variety Protection**, Granting plant breeders the rights to control the use and distribution of plant varieties they have developed.
- f) **Integrated Circuit Layout Design**, Protecting the physical design of integrated circuits (ICs) or electronic chips.
- g) **Geographical Indications**, Safeguarding products originating from specific geographical regions with distinctive qualities, reputation, or characteristics.
- h) **Indications of Origin**, Identifying products from a particular country or region.

2) Copyright

Copyright is a domain that involves the protection of creative and intellectual works, including literature, music, art, film, software, and other works. Copyright grants creators exclusive rights to control the reproduction, distribution, utilization, and adaptation of their works.

Both industrial rights and copyright are essential instruments for protecting intellectual property rights and fostering innovation in various industries. In the Indonesian context, regulations regarding intellectual property rights are significantly influenced by the ratification of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). This ratification represents a crucial step taken by Indonesia to comply with WTO-related agreements, including rules related to intellectual property rights.

Indonesia formally ratified the Agreement Establishing the World Trade Organization in 1994 through Law No. 7 of 1994. This official act bound Indonesia to the obligations outlined in TRIPS. By ratifying TRIPS, Indonesia adheres to international standards governing the protection of intellectual property rights, including patents, copyrights, trademarks, and other aspects related to trade and economics. This step is crucial for facilitating international trade, protecting the rights of creators and innovators, and ensuring that Indonesia complies with global standards regarding intellectual property rights.⁴⁸

Indonesia has taken several important steps to regulate and protect intellectual property rights. Various regulations have been established to govern specific aspects of intellectual property in the country. Here are some of the relevant regulations:⁴⁹

48 Hari Sutra Disemadi and Cindy Kang. "Tantangan Penegakan Hukum Hak Kekayaan Intelektual dalam Pengembangan Ekonomi Kreatif di Era Revolusi Industri 4.0." *Jurnal Komunikasi Hukum (JKH)* 7, no. 1 (2021): 54-71. DOI: <https://doi.org/10.23887/jkh.v7i1.31457>, 60.

49 Agung Dwi Prabowo, "Aktualisasi Hak Asasi Budaya Dalam Pelindungan Hukum Dan Pelestarian Kekayaan Intelektual Komunal Dikaitkan Dengan Upaya Pemajuan Kebudayaan (Studi Kasus Ekspresi Budaya Tradisional Masyarakat Jawa Timur)." Tesis, Universitas Gadjah Mada, 2020.

- 1) **Law of the Republic of Indonesia Number 29 of 2000 on Plant Variety Protection:** This law regulates the protection of plant varieties and the rights of plant breeders.
- 2) **Law of the Republic of Indonesia Number 30 of 2000 on Trade Secrets:** This law governs the protection of trade secrets and confidential business information.
- 3) **Law of the Republic of Indonesia Number 32 of 2000 on Integrated Circuit Layout Design:** This law regulates the protection of integrated circuit layout designs.
- 4) **Law Number 28 of 2014 on Copyright:** This law governs copyright, including the rights of creators over intellectual works such as books, music, and art.
- 5) **Law of the Republic of Indonesia Number 13 of 2016 on Patents:** This law governs patent rights, protecting technological inventions and innovations.
- 6) **Law of the Republic of Indonesia Number 20 of 2016 on Trademarks and Geographical Indications:** This law governs trademarks and geographical indications, involving the protection of product brands and the identification of geographical origins of products.

b. Efforts to Address the Potential Threats of NFT and Metaverse

NFTs are digital assets that represent real-world objects, such as artworks, paintings, animations, photos, videos, music, signatures, tickets, and various other creative works. Their connection to digital assets in the form of NFTs is closely linked to the protection of intellectual property rights, including copyrights, trademarks, and industrial designs, which can be accessed online and enjoyed by the public.⁵⁰ Challenges arise when this access is misused for activities that infringe upon intellectual property rights.

Conceptually, NFTs are seen as tools that provide artists with greater control over their creative works. However, in practice, various cases have emerged where NFTs have facilitated the actions of irresponsible parties selling other people's artwork. When examining intellectual property implications related to NFTs, it's essential to distinguish between ownership of the NFT itself and ownership of the intellectual property rights underlying the artwork. The rights granted by NFT sellers depend on the rights transferred through licenses, and these rights can vary from one NFT to another.

Therefore, the efforts should focus on developing a comprehensive and coordinated protection infrastructure across all sectors, encompassing both legal and technological aspects. Particularly in the context of art and NFT technology, it is crucial for the government and relevant stakeholders to establish legal alignment concerning NFTs and the Metaverse. Legal responses are imperative to address NFTs and the Metaverse effectively. This can be accomplished through legal protection of the intellectual works found within NFTs and the Metaverse. As identified by Phillipus M. Hadjon, legal protection can be either repressive

50 Maya Ruhtiani, Yuris Tri Naili, Hesti Ayu Wahyuni, and Purwono Purwono. "Perlindungan Aset Digital Pada Era Metaverse Dalam Perspektif Hukum Positif Di Indonesia." *Literasi Hukum* 6, no. 2 (2022): 28-39. <https://jurnal.untidar.ac.id/index.php/literasihukum/article/view/6804>, 34.

or preventive.⁵¹ In the context of NFTs, a proactive approach is considered most suitable. A preventive approach involves efforts to avert conflicts or rights violations before they occur. In this regard, preventive legal protection can include measures such as regulations governing the rights and responsibilities of NFT users, copyright provisions, trademarks, and other clearly defined intellectual property rights.

Legal uncertainty related to Non-Fungible Tokens (NFTs) in Indonesia is a serious challenge in efforts to protect intellectual works. Although supervision efforts are carried out by the Ministry of Communication and Information Technology (KOMINFO) through PRESS RELEASE NO.9/HM/KOMINFO/01/2022, the lack of specific and comprehensive regulations is still a major problem. Existing laws and regulations can indeed be used as a legal umbrella to protect intellectual works, but in the absence of regulations specific to NFTs, legal risks remain. This void may lead to ambiguity in the legal handling of NFT transactions, leaving industry players, both sellers and buyers, in a situation of uncertainty.

KOMINFO's press release so far only provides general oversight of NFT transactions without providing a detailed legal framework. Detailed regulations are urgently needed to address various legal aspects relating to NFTs, including copyright, ownership, and consumer protection. The government's next steps should consider drafting adequate regulations to protect copyright owners, encourage the growth of the NFT ecosystem, and provide legal certainty for all parties involved. As the technology evolves and the adoption of NFTs becomes more widespread, efforts to fill this legal void are becoming increasingly urgent.

In addition, further protection is needed with regulations specifically governing NFTs and Metaverse, there may be a need for specific regulations regarding NFTs and the Metaverse. Since NFTs involve the creative process in minting, they can be categorized as "Creations" under the definition of Article 1, paragraph (3) of Law Number 28 of 2014 concerning Copyright. Article 1, paragraph (3) of the aforementioned law defines Creations as "any result of work in the fields of science, art, and literature produced by inspiration, ability, thought, imagination, cleverness, skill, or expertise expressed in tangible form." Thus, NFTs, which are digital creative works, can be considered as Creations subject to copyright protection. This indicates that NFT creators have certain rights related to their works, including the right to control reproduction, distribution, and use of their creations. Furthermore, Article 118 of the Copyright Law states that any person who intentionally and without permission infringes on economic rights for commercial use can be subject to sanctions. This highlights that copyright law provides protection for economic rights related to creative works, and violators can be prosecuted under the law.

The protection of trademarks within the Metaverse can be essential to prevent counterfeiting and brand theft, both in the Metaverse and the physical world. Trademark

51 Philipus, M. Hadjon. *Perlindungan Hukum Bagi Rakyat Indonesia*. (Surabaya: Bina Ilmu, 1987).

protection in the Metaverse can be carried out in accordance with the provisions of Law Number 20 of 2016 concerning Trademarks and Geographical Indications.⁵² Companies need to adopt a proactive approach to protect their trademarks in the Metaverse, which should be part of their future business and product strategies. This is necessary because as the Metaverse continues to evolve, the risk of brand theft and counterfeiting may increase. Therefore, companies need to continuously monitor and update their trademark protection strategies in line with technological developments and trends in the Metaverse.

Violations of industrial designs can also be an issue in the Metaverse, particularly concerning the sale and use of industrial designs to create avatars in the Metaverse. Industrial designs encompass various elements like shape, configuration, line composition, color, and combinations of these elements. These designs can be in three or two dimensions and aim to provide an aesthetic impression used to produce various products or goods. In the context of the Metaverse, the protection of industrial designs may also need to be considered and may require appropriate legal protection. Most industrial designs in the Metaverse are digital representations of physical designs but still hold significant economic value. Therefore, industrial design owners need to ensure their rights are adequately protected in the Metaverse, which may involve aspects of intellectual property as governed by relevant laws.

Legal protection for digital assets in the era of the Metaverse is equivalent to legal protection for assets in the physical world. This is because digital assets have economic value, and their violation can harm others, particularly in the context of legitimate digital assets owned by individuals with valid ownership evidence, such as the use of private digital keys. This protection is applied specifically within the Metaverse itself and is supported by blockchain technology, which provides a high level of security that is difficult to breach and not easily misused.⁵³

Therefore, some steps that can be taken in terms of intellectual property rights (IPR) ownership can be done by making regulations governing digital IPR monitoring services that can help detect illegal use of works and provide reports to owners. In addition, cooperation with NFT platforms is very important. IPR owners can collaborate with such platforms to report infringements and discuss resolution measures, including the withdrawal or removal of illegal works. Many NFT platforms have specialised procedures and teams to handle IPR infringement claims. If infringement claims cannot be resolved amicably, IPR owners may choose to involve the courts or dispute resolution bodies. These are legal avenues that can be taken to claim damages or resolve disputes.

Meanwhile, it is necessary for the government to encourage NFT and Metaverse platforms to establish regulations within community guidelines and to remove NFTs

52 Maya Ruhtiani, Yuris Tri Naili, Hesti Ayu Wahyuni, and Purwono Purwono. *Op.Cit.*

53 *Ibid.*

containing elements of plagiarism. This is a positive step to prevent copyright violations within the NFT ecosystem. Community guidelines can provide guidance to users on expected behavior and remind them to respect the copyrights and intellectual property of others. Regarding the mechanism for removing NFTs and recording their history on the blockchain in cases of copyright infringement, this reflects an approach similar to social media platforms like YouTube, which allows users to report content that contains copyright violations or plagiarism. The purpose of this removal mechanism is to maintain the integrity of copyright and provide users who believe their copyright has been violated with the opportunity to file claims. Because NFT certification does not function as a mechanism to prevent duplication and online distribution of works, it merely confirms the existence of specific copies and preserves the duplication characteristics of the work.⁵⁴ Therefore, it is important to consider the potential of NFTs to store additional information such as the work's title, author's identity, copyright status, and other relevant elements for the future.⁵⁵

To address other threats and risks such as personal data theft and privacy concerns, the Personal Data Protection Act Number 27 of 2022 can be referenced. This law provides solutions to address personal data protection issues in Indonesia. The law's Article 2, paragraph (1) clearly states that anyone, public bodies, and international organizations that perform legal actions as regulated by this law within the jurisdiction of the Republic of Indonesia. It also applies to anyone, public bodies, and international organizations performing legal actions as regulated by this law outside the jurisdiction of the Republic of Indonesia if those actions have legal consequences within the jurisdiction of the Republic of Indonesia.⁵⁶ This means that the law has extraterritorial jurisdiction, which implies that actions conducted outside Indonesia but affecting Indonesian citizens or the Indonesian jurisdiction are subject to the provisions of the law.

Regarding the threat of money laundering, compliance screening processes can be implemented for accounts involved in transactions to identify potential money laundering risks. These actions will ensure that any attempts to use concealment techniques will be detected, and other money laundering risks can be identified. This means that everything is recorded. Therefore, blockchain analytics solutions can be used to understand the origin and purpose of funds involved in transactions. In efforts to address financial crime threats in the Metaverse environment, the development of norms that can help reduce risks for participants in the Metaverse is necessary. Additionally, collaboration among government agencies such as the Corruption Eradication Commission, Financial Transaction Reports

54 Salomé Cuesta Valera, Paula Fernández Valdés and Salvador Muñoz Viñas, "NFT and digital art: New possibilities for the consumption, dissemination and preservation of contemporary works of art." *Artnodes*, 28, 1-10. <https://doi.org/10.7238/artnodes.v0i28.386317>.

55 Andreas Guadamuz, (2021). The treachery of images: non-fungible tokens and copyright. *Journal Of Intellectual Property Law and Practice*, 16(12), 1367-1385. <https://doi.org/10.1093/jiplp/jpab152>

56 Pasal 2 ayat (1) Undang-undang (UU) Nomor 27 Tahun 2022 tentang Pelindungan Data Pribadi.

and Analysis Center, Ministry of Communication and Information Technology, Financial Services Authority, Indonesia Crypto Exchange, and others is needed. Through this collaborative effort, more effective norms and regulations are expected to be developed to maintain integrity and security in the Metaverse, especially regarding financial aspects and the use of cryptocurrencies and NFTs. This can help protect participants in the Metaverse from potential financial crime risks and losses caused by corrupt individuals.

Moreover, in the context of money laundering regulations, in particular, agencies such as the Financial Transaction Reports and Analysis Centre (PPATK) could have a crucial role. They can have access to blockchain technology to conduct investigations regarding suspicious transactions and activities. However, this access must be done in accordance with legal provisions and privacy policies, involving co-operation with blockchain platform providers. It is important to note that collaboration and coordination between interested parties, authorities, and NFT platforms are key in protecting IPR and preventing misuse of this technology. These joint efforts will form a strong foundation for IPR protection and transaction integrity within the NFT and Metaverse ecosystems.

As a comparison, in the European Union, cryptocurrencies are regulated by the Fifth Anti-Money Laundering Directive (5AMLD), reintroduced in 2020. The 5AMLD grants financial intelligence units the power to identify virtual currency owners. It also proposes that cryptocurrency exchanges and wallet providers must be registered with relevant domestic authorities, even though this may conflict with cryptocurrency anonymity.⁵⁷ In the United States, President Biden signed a presidential order to ensure responsible development of digital assets, pushing regulators to monitor risks posed by digital assets and develop policies to address vulnerabilities while supporting technological advancements to ensure digital asset security. The country has the Anti-Money Laundering Act of 2020, where virtual assets and digital asset service providers are included under the Bank Secrecy Act regulations.⁵⁸ In neighboring Indonesia, specifically Singapore, cryptocurrency assets are considered “digital payment tokens,” and cryptocurrency service providers are referred to as “digital payment token services” regulated by the Payment Services Act. Cryptocurrency asset companies located in Singapore but providing services outside Singapore are regulated under this legislation. Additionally, this law introduces significant licensing requirements and grants the Monetary Authority of Singapore new powers. These comparisons can serve as considerations for the Indonesian government in regulating NFT and Metaverse transactions.

D. Closing

The rapid technological advancements in recent years have brought significant innovation to various aspects of our lives, including the realm of intellectual property. The

57 Jiajing Wu, Kaixin Lin, Dan Lin, Ziyi Zheng, Huawei Huang, and Zibin Zheng. *Op.Cit.*

58 *Ibid.*

emergence of Non-Fungible Tokens (NFTs) and the virtual world of the Metaverse has provided creators of intellectual works with new opportunities but has also introduced potential threats that need to be addressed. This research has outlined how appropriate regulations can respond to these innovations. Thus far, we have observed that NFTs and the Metaverse pose potential threats to intellectual property rights, with increasingly complex cases of intellectual property violations, detrimental identity theft, and other infringements. It is essential to continue developing a responsive legal framework, particularly in the face of rapid technological advancements.

Furthermore, the potential use of the Metaverse as a channel for illegal money laundering is also a serious concern. In addressing this challenge, existing regulations must be adapted and updated to reflect this new reality. However, legal changes alone are not sufficient. Legal protection should be combined with the implementation of strict community guidelines by NFT and Metaverse platforms. Active collaboration among creators, platforms, government entities, and other stakeholders is also required to address these threats. Therefore, as technology continues to evolve, it is essential to prioritize the interests of creators of intellectual works and maintain a balance between innovation and legal protection. With the right framework, NFTs and the Metaverse have the potential to become safe and sustainable creative spaces in the ever-developing digital era.

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Annisa Hafizhah has established herself as an accomplished legal writer since 2018. In 2019, she co-founded the Forum for Islamic Scientific Studies (Forum Studi Ilmiah Islam), catering to the academic needs of law students at the Faculty of Law, Universitas Sumatera Utara. Currently serving as a lecturer at the Faculty of Law, USU, Annisa Hafizhah is pursuing her Ph.D. in Law, specializing in her field of expertise. Her scholarly pursuits and dedication to legal research exemplify her commitment to academic excellence and intellectual growth.

Aji Baskoro is a graduate of the Faculty of Sharia and Law at UIN Sunan Kalijaga Yogyakarta, with a Bachelor of Laws degree. During his studies, Aji Baskoro has been actively involved in various activities and organizations, particularly at the Center for Legal Studies and Consultation. With his dedication and meaningful contributions, he has become one of the main movers in various legal discourses, especially in issues of human rights and legal protection. His various written works are clear evidence of his commitment and deep understanding in various aspects of law.

Aisha Radha Wahyuda is currently pursuing a master's degree in law at the Islamic University of Indonesia. She earned her Bachelor of Laws from the Law Studies Program at UIN Sunan Kalijaga Yogyakarta. Hailing from Kalimantan, she has a strong passion for working in the legal domain.