Intellectual Property Disputes and International Jurisdiction in the Metaverse Environment

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I. Introduction

The Metaverse, this word has come under increasing media spotlight, when Facebook renamed itself as Meta in October 2021.[1] Korean businesses[2] and Central and local government[3] have also paid attention to the future value of the Metaverse by recognizing that it may be used not only in politics and administration, but also in education and entertainment in the future. Although some scholars criticized the Metaverse,[4] Seoul Metropolitan Government announced it would provide public services to the general public over a Metaverse platform.[5] Because the Metaverse merges various technologies such as VR, AR, Artificial Intelligence, blockchain, cryptocurrencies, NFTs, decentralized architecture, and others[6], this system is various and complex. And due to such complexity, many people may be confused and raise doubts about the possibility of regulating the Metaverse through existing legal framework. But many businesses believe the complexity of Metaverse means possibility to challenge and to invest. However, before businesses invest and trade in the Metaverse, legal scholars should define and find the legal issues in the Metaverse. In this paper, I will discuss the definition of the Metaverse, its centralized or decentralized architecture, substantive and procedural legal issues.

II. Definition of the Metaverse

What is the Metaverse? One of online games of already existing Internet platforms? Or another name of Virtual

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[1] Denise Lee Yohn, Facebook's Rebrand Has a Fundamental Problem, HARVARD BUSINESS REVIEW (Nov. 2, 2021), https://hbr.org/2021/11/facebooks-rebrand-has-a-fundamental-problem.

[2] Matthew Ball, "The Metaverse Will Reshape Our Lives. Let's Make Sure It's for the Better", Time(July 18, 2022), <https://time.com/6197849/metaverse-future-matthew-ball/>.

[3] Korean government announced 556 billion won to be invested in the metaverse in early 2022, our government. Lee, Seung-yup, "Government to invest 556 billion won in the 'metaverse' in this year..."Aim for world No. 5 in 2026"", The Korea Times (Jan. 20, 2022), <https://m.hankookilbo.com/News/Read/A2022012013380002959>.

[4] However, there are also many criticism about the Metaverse by comparing it to communist propaganda, which promised to build an idealized future, and never realized (Victor Tangermann, CEO Born in Soviet Russia Says Metaverse Is Just Like Communist Propaganda, FUTURISM (Jan. 12, 2022), https://futurism.com/metaverse-communist-propaganda?utm_campaign=trueanthem_AI&utm_medium=social&utm_source=facebook) or by comparing it to "opium for the masses."(Victor Tangermann, CEO Born in Soviet Russia Says Metaverse Is Just Like Communist Propaganda, FUTURISM (Jan. 12, 2022), https://futurism.com/metaverse-communist-propaganda?utm_campaign=trueanthem_AI&utm_medium=social&utm_source=facebook)

[5] See https://www.egis-group.com/all-insights/the-metaverse-driving-the-development-of-cities-digital-twins

[6] See generally Matthew Ball, Framework for the Metaverse, MATTHEWBALL.VC (June 29, 2021), https://www.matthewball.vc/the-metaverse-primer

Reality ("VR")?[7] Or another service provider? Because, to foster or regulate the Metaverse industries, it is necessary to clearly define the concept of the Metaverse, various scholars have tried to define it, but it has not yet been clearly defined like the Internet in 1960s[8]. Now there are many definitions of the Metaverse as there are scholars discussing it. Some scholars argue that the Metaverse is just the form of online games and other Internet platforms.[6] Others believe that the Metaverse is the future Internet which may materialize after few decades.[7] At the 'Metaverse Roadmap Summit' in 2006, the Acceleration Studies Foundation classified the Metaverse based on the its elements and types into four categories: augmented reality, mirror worlds, lifelogging, and virtual worlds and this concept is generally accepted.[9] However, this classification does not also clearly define the Metaverse.

The term 'Metaverse' is a portmanteau of the Greek word μετά meaning 'after or beyond, transformation or change' and the universe meaning the world. This term first appeared as a term referring to the virtual world in the science fiction novel "Snow Crash" by Neal Stephenson published in June 1992. Although lots of persons have tried to create new digital world for many years, due to the technical limitations, this technology had been treated as a consumer's amusement. However, many people believe that the development of technology such as commercialization of 5G networks and 3D graphics, VR/AR technology will make a substantial Metaverse possible. However, most people do not believe the Metaverse will be realized in the near future

In the absence of a "true" Metaverse and its definition, how do we envision the Metaverse for the discussion of legal issues? The closest approximations to the Metaverse that come to mind at this point are the Metaverse platforms, such as Roblox and Zepetto. Although these are not "true" Metaverses, there is a prospect that they will be part of "true" Metaverses in the future, so it may be meaningful to examine legal issues based on them at this stage.

III. Types and Characteristics of Metaverse Platforms

While a Metaverse platform in the broadest sense encompasses Massively Multiplayer Online Role-Playing Games (MMORPGs) in which users play as a game character, the term Metaverse platform generally refers to one that operate in a way that allows users to add new creations to its platform by using avatars and own the rights[10] to those creations. The beginnings of such a Metaverse platform may be traced to Second Life, launched

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[7] If current Metaverse is just like virtual game, we don't need the term "Metaverse" because we can use the term the "Internet". However, the term Metaverse is a distinctive descriptor and allows us to understand the enormity of that change and in turn, the opportunity for new era.

[8] Tom K. Ara, et al., Exploring the metaverse: What laws will apply?, DLA PIPER (Feb. 22, 2022), https://www.dlapiper.com/en/us/insights/publications/2022/02/exploring-the-metaverse/.

[6] Scott, Facebook is late: the Metaverse already exists, GLOBAL HAPPENINGS (Oct. 29, 2021), https://globalhappenings.com/technology/30425.html.

[7] John Mac Ghlionn & Brad Hamilton, Metaverse clothing, travel, plastic surgery: Experts predict life in 2030, N.Y. POST (Jan. 8, 2020), https://nypost.com/2022/01/08/experts-predict-living-in-the-metaverse-by-2030/.

[9] Smart, J.M., Cascio, J. and Paffendorf, J., "Metaverse Roadmap Overview" Metaverse Roadmap(2007), <https://www.metaverseroadmap.org/overview>

[10] Since ownership implies full and exclusive rights to a thing, and a thing is defined in Article 98 of the Civil Code as "corporeal things, electricity, and other natural forces which can be managed," ownership of an object created for use in the

in 2003 by US startup Linden Lab.

The main feature[11] that distinguishes a typical Metaverse platforms, widely referred to as Metaverses today, from MMORPGs is that Metaverse has a unique economic ecosystem in which users create things within the Metaverse platform and transactions between users take place through cryptocurrencies (i.e. Robux in Roblox or Zem in Zepeto) used on the platform. The types of Metaverse are further divided into centralized and decentralized Metaverses, depending on whether or not the platforms are interoperable. The former is run by a single company that manages the activity between users and the data they generate such as Roblox and Zepeto. The latter is called a decentralized/open Metaverse because its virtual world can be accessed freely via its own client software or via alternative third-party viewer with blockchain technology which decentralizes the functions of a centralized metaverse operator and because it is run by a decentralized autonomous organization (DAO), where users collaborate to set their own rules such as Decentraland, The Sandbox.[12]

Another distinction between Metaverse and other systems is that Metaverse focuses on how users experience this Internet.[13] The Metaverse may be defined as the immersive environment, where users not only experience three-dimensional virtual world, but they are in that environment, represented by their avatars. Through immersive environment, the Metaverse makes it to distinguish between the real and virtual world[14] by a so called "rubber hand illusion."[15] As a result, by using imperfect human brain, human may confuse real world with virtual world. In other words, to create an immersive environment and make the virtual world look like the real world, the true Metaverse needs special equipment such as a headset,[16] a pair of goggles, a head-mounted device, a haptic suit,

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Metaverse is not a right to a thing and therefore is not ownership. Therefore, if an exclusive right exists in the things, it is probably an intellectual property right, such as copyright or trademark.

[11] Since there is no precise definition of a metaverse, we're referring to metaverse systems that are currently referred to as metaverses.

[12] There is some debate about whether a centralized or open metaverse is a better system, but each has its advantages and disadvantages. While many people favor an open metaverse, there is no control system and no way to resolve legal issues if they arise, whereas a closed metaverse has the advantage of being regulated by a controlling operator if legal issues arise. So from a disciplinary point of view, closed systems are better, but freedom advocates favor open systems.

[13] PixelPlex Team, Decentralized Economy -- the Role of Blockchain in the Metaverse, PIXELPLEX (Feb. 9, 2022), https://pixelplex.io/blog/importance-of-blockchain-in-metaverse/.

[14] See Lemley & Volokh, supra note 17, at 1136. According to cognitive research, users of VR often act in the same way as in the real world. Id. See also Gilad Yadin, Virtual Reality Exceptionalism, 20 VAND. J. ENT. & TECH. L. 839, 842 (2018).

[15] It is stated that this trial was conducted for medical purposes about twenty-five years ago and it had nothing to do with the Internet or the Metaverse.

[16] In 2014, Facebook purchased Oculus, a producer of headsets for gamers for $ 2 billion, and started working on the improvement of headset technology. Molly Wood, When Facebook bought Oculus did it make the VR firm less relevant?, MARKETPLACE TECH (July 5, 2019), https://www.marketplace.org/shows/marketplace-tech/when-facebook-bought-oculus-did-it-make-the-vr-firm-less-relevant/

tactile-sensing gloves, smartwatches, which does not fully exist yet and special environment such as servers for storage of big data and high speed Internet to allow for uninterrupted transfers of big data.[17]

Therefore, the Metaverse generally encompass the common feature that platform users represent themselves with avatars, and there is an economic ecosystem in which economic activities such as creation and trading of virtual assets take place. Moreover, with the advancement of technology, current the Metaverse also includes a form that utilizes blockchain technology, and that makes a contract and executes automatically with “smart contract” if virtual assets are traded.[18]

IV. Nature of Metaverse platform in Korea Law

As the Metaverse moves toward commercialization, numerous legal issues have been emerging. The legal nature of the Metaverse system has yet not to be clearly defined as said above. However, generally some define the Metaverse is a 3D-based virtual game world in which daily activities and economic life are carried out through an avatar representing the real person, or others do it is a simple platform which provides contents that allows users to interact with other users or a platform where games and life services are provided independently and then evolve and converge to create a virtuous cycle.

The Metaverse is similar to a game in that a person outside the Metaverse world controls an avatar that exists inside it, but a game is controlled by the users playing the game within the limited scope foreseen by the operation company that created the game in advance. In contrast, the Metaverse is different from a game in that the virtual world cannot be terminated unless there is a consensus of the members or an unavoidable circumstance of the service provider and an open structure that can be determined by the avatar's owner in situations unforeseen by the game company, so it is not appropriate to define it completely as a game. However, while a Metaverse functions like a platform in that the content of the virtual space can be freely set by users outside the space and changed within the limits system allows, it is not accurate to consider the Metaverse a platform that users may provide some contents, because platforms generally do not provide any content like Google, Youtube. However, in Korea, there are significant legal issues in either direction, so we will describe the legal issues in the view of a game and the issues in the view of a platform. However, there are significant legal issues that will arise no matter which way I decide, so this paper discusses the legal issues for a game and for a platform.

1. Issue under Game Industry Promotion Act (GIPA)when viewed as a game

Article 2 (1) of the GIPA defines "game product" is as follows.

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[17] See Doug Dawson, Network Requirements for the Metaverse, CIRCLEID (Mar. 12, 2022), https://circleid.com/posts/20220312-network-requirements-for-the-metaverse.

[18] However, this system has also many problems, and thus, to operate the Metaverse, many scholars in legal area as well as computer area should do interdisciplinary study ASAP.

The term "game product" means any video product produced so that one can play a game by making use of data processing technology, such as computer programs, or a mechanical device for making good use of leisure time, raising the effect of learning and physical exercise incidental thereto, or apparatus and devices produced for the main purpose of using such video products: Provided, That any of the following shall be excluded:
(a) Speculative game products;
(b) Things subject to be regulated by the provisions of tourism business under Article 3 of the Tourism Promotion Act: Provided, That facilities or machines for amusement or games in which the characteristics of game products are intermingled with each other shall be excluded;
(c) Things determined and publicly notified by the Minister of Culture, Sports and Tourism, as things in which game products and non-game products are mixed;

The Metaverses such as ZEPETO and ROBLOX, which are currently in operation, can be seen as game product article 2 (1) of GIPA because the Metaverse is mainly used by young people for entertainment or learning with computer programs in their spare time with what they or the Metaverse operations have created in the virtual space. If the Metaverse is considered a game product, such metaverse system could potentially violate subsection 7 of Article 32(1) under the Game Industry Promotion Act[19] because the most important reason why companies providing Metaverse services have focused on the Metaverse is that they can create a Play to Earn system where users can earn money by providing labor in the game, which can then be exchanged for cryptocurrency and used like cash, earning a commission in the process.[20]

Article 32, paragraph 1, item 7 of the Act prohibits any person from “making a business of converting into money or intermediating such conversion or repurchase of tangible and intangible results (referring to game money prescribed by Presidential Decree and things similar thereto prescribed by Presidential Decree, such as score, premiums, and virtual currency used in game) obtained through the use of game products by anyone” and Article 18-3, paragraph 1 which is the related Enforcement Decree defines game money as “game money which becomes a means of betting or allotment or acquired by some fortuity when using a game product” or Article 18-3, paragraph 3 (a) define “Game money or data, such as game items, produced or acquired through the abnormal use of game products, such as the production or acquisition of game money or game items for business purposes by using game products.” The GIPA completely prohibits the exchange of game money and items as a business, and stipulates that violators shall be punished by imprisonment for not more than five years or a fine of not more than 50 million won in Article 44(1)(2) of the Act. Of course, the Korea Supreme Court held that 'game money and similar things prescribed by the Presidential Decree' is not included into the 'tangible and intangible results obtained through the use of game products' that are prohibited from being exchanged in subsection (7) of Article 32 (1) of the GIPA.

[19] Soo-Jung Sohn, Intellectual Property Issues Related to the Use of AI in the Metaversehttps://www.worklaw.co.kr/view/view.asp?accessSite=Naver&accessMethod=Search&accessMenu=News&in_cate=104&in_cate2=1036&gopage=1&bi_pidx=33502

[20] Park, Jinwoo, Deliver and earn coins in the metaverse...the evolution of game money,, https://www.hankyung.com/finance/article/2021111475231. Quite a few metaverse companies, such as Xinfinity and Roblox, allow virtual currency to be issued and cashed out.

However, if you understand “game money as a means of dividend when using game products”, it can be interpreted as game money that is a means of dividend in the metaverse, which is a game product, so it is burdensome to accept the Supreme Court’s ruling as it is. In particular, many companies participating in the Metaverse choose virtual currency as a medium for users to join in the Metaverse, and want commission fees generated from the exchange of virtual currency, but GIPA prohibits such activities, which will obviously reduce the number of users.

In response to Congressman Kim Seung-soo's request to review the legal meaning of 'Metaverse' and 'Metaverse operators', the National Assembly Research Service (hereinafter NARS) stated that it is difficult to directly apply the Game Industry Promotion Act to the Metaverses because that "it is difficult to find laws that directly define Metaverses in the world and existing laws are applied to the Metaverse services and its operators".[21] Its opinion is as belos

-Metaverse is utilized as a form of platform on which games are offered, so a Metaverse is not the same as a game. -For example, Roblox, a global Metaverse platform, provides an open environment for the public to develop games, and there are currently 40 million registered games on Roblox. -Therefore, it may not be possible to view the Metaverse itself as a game or the Metaverse provider as a game provider.

It is not correct to equate a Metaverse with a game, as it is understood that the NARS views a Metaverse as a platform and the games within it as content. However, this raises another issue, the nature of games registered on a Metaverse. Currently, Metaverses and games are very similar. This does not resolve the "fundamental question" of whether game and Metaverse can be clearly distinguished as entirely separate concepts, as the NARS interpreted. Therefore, there are some different opinions about this interpretation.[22] At least, one lawyer stated that “if content of the same nature as a game is treated differently because it is provided in a Metaverse, this may result in unfair discrimination against game providers which provide game content that is not in the Metaverse ,” and Congressman, Ha Tae-kyung stated that it should apply the Game Industry Act to games on the Metaverse platform. These opinions mean that game product within the Metaverse should not be exchanged into the cash. Therefore, at this point, it's questionable whether a "Play to Earn" game which is the most powerful incentive is possible in the Metaverse.

2. Issues with viewing it as a simple platform

Another issue arises when Metaverse is considered a simple platform. Copyright infringement that occurs within the Metaverse can be either directly provided by the platform provider or provided by Metaverse users. In the

[21] Bang Seung Eon, National Legislative Research Service 'The metaverse itself is not a game'... What does that mean? https://www.thisisgame.com/hs/nboard/4/?n=129900.

[22] Digital Daily, Should Games on Metaverse Be Regulated by the Game Industry Promotion Act? http://m.ddaily.co.kr/page/view/2022122318112528020

former case, the platform providing the Metaverse service is a copyright infringer as an content provider, and in the latter case, Metaverse platform is an simple Internet service provider. If a Metaverse user uploads an illegal copyrighted work to the Metaverse, it does not constitute copyright infringement of service provider, following the requirements of Article 102 (1) ③ of the Copyright Act. Therefore, if the ISP, Metaverse, does not remove the infringing materials after notification of the copyright holder to the ISP about the infringement. it constitutes copyright infringement. Therefore, the only question is how clearly the right holder can notify the Metaverse platform the infringement material.

In Supreme Court 2019. 2. 28. judgment 2016Da271608, the Korean Supreme Court held that "even if infringing material has been uploaded to a website provided by an ISP and the infringing material may be easily located through the ISP's search function, this circumstance alone does not immediately impose tort liability on the ISP for the infringing material, and if the ISP is not specifically aware of the infringing material, because the copyright holder has not informed the ISP of a specific infringing material to remove and block, the ISP is not obligated to take appropriate measures such as removing or blocking the infringing material in the future in the same Internet service."

According to the Supreme Court's holding, the claimant of copyright infringement must provide the online service provider (in this case Metaverse) with specific and individual information about the infringing material, such as "URL address, cafe name, bulletin board name, post number, post title, etc." of the infringing material, otherwise the ISP is not liable for aiding and abetting liability due to negligence. If the online service provider only provided a storage device and the copyright infringement was caused by a direct infringer (i.e. user) without the consent of the copyright holder, it seems that the ISP is obliged to remove the illegal work, and thus is not liable for copyright infringement by omission caused by not removing specific and individual illegal works. This means that the Metaverse is liable to the copyright infringement only when the copyright holder notified to the Metaverse and requested takedown with specific URL address of infringing material. However, URL address of copyrighted work is not provided in the current Metaverse system. Because the exact location of the infringing material does not appear in the Metaverse, and because the copyright holder cannot provide the location information to it, a Metaverse operator has not a duty to remove an illegal work even if an infringing material exists in the Metaverse. The copyright holder should argue the alternative provisions Article 104 of the Copyright Act enacted to apply to P2P providers.

However, since Article 104 of Korean Copyright Act is essentially a provision designed to control or prevent only P2P systems, if a Metaverse system is only considered similar or identical to P2P, Article 104 should apply to the Metaverse. According to Article 104 and decision of Korean Supreme Court, the Metaverse operator must "take necessary measures, such as technical measures to block the illegal transmission of such works, if requested by the right holder," but there is no technical measure to block illegally uploaded files with current technology, and if illegal works are uploaded as NFTs in connection with the blockchain, there is no deletion function in Metaverse. Therefore, in order to operate a Metaverse eco-system that connects the real and virtual worlds, the only way is to apply Article 102 of the Copyright Act by modifying the Supreme Court holding. I think at least in the Metaverse, it seems that rather than burdening the copyright holder with the obligation to provide specific location

information of the illegal work, the copyright holder should provide the its copyrighted work itself to the Metaverse provider so that the Metaverse platform may block the illegal material with its search function in the Metaverse platform.

V. Implication of the issue

It is clear that legal issues will arise whether the Metaverse is recognized as a game, or whether is recognized as an online service provider or a platform. However, if it is recognized as a platform as an online service provider, the infringer who uploads within the Metaverse without consent of copyright holder may know the exact information that the work exists (i.e. specific URL address), but the copyright holder cannot or may not recognize the exact information of the infringing work to stop copyright infringement, so there is no way to protect copyright owners. If the Metaverse is recognized as a game, Metaverse operators do not apply the Play-to-Earn system to a Metaverse that is a game due to the GIPA, and because users cannot make money in the Metaverse, there is no strong incentive to use the Metaverse. Therefore, in order to promote the Metaverse business, it is necessary to quickly define its nature and then require strong regulation.

V. Recent Cases

1. Roblox case

A well-known case alleging copyright infringement against a metaverse is ABKCO Music Inc. v. Roblox Corp.[23] in which Roblox was sued for at least $200 million on June 9, 2021, alleging direct, contributory, and vicarious copyright infringement. According to the claims of the National Music Publishers' Association (NMPA), Roblox authorized users to upload music to Roblox's library without the consent of the copyright holder, allowed the uploaded music to be synced with user-created works, charged users a fee (robux) for uploading music files, and generated revenue by advertising the importance of music on the platform. Therefore, because Roblox cannot be unaware of the infringement on its service, the infringements were willful on Roblox's part. Against this plaintiff's argument, Roblox responded that it is protected from liability under 17 U.S.C. § 512(c)(1)(A)-(C) of the DMCA safe harbor provision. Regarding Roblox's claim, NMPA argued as follows. "Roblox employees were in fact aware of copyright infringement because they adopted a procedure to pre-screen illegal music works before uploading them to the platform." However, the copyright infringement dispute was settled.[24] As such, it did not set an important precedent for Metaverse liability.[25]

2. Cross case

Because NFTs are directly relevant to the Metaverse, and the notice and takedown issues are the same for NFT

[23] Case No. 2:21-cv-04705 (C.D. Cal.)

[24] https://www.reuters.com/legal/transactional/roblox-music-publishers-settle-copyright-licensing-dispute-2021-09-27/

[25] If the case had been decided by a court, it would have set an important precedent for how notice and takedown should be handled and under what circumstances a metaverse operator can be found to be infringing as an ISP.

systems, the Cross case is often mentioned despite non-litigation. A group of artists, BlockCreatArt (BCA), recognized that there are a total of 58 works minted on Cross without the consent of the copyright holders, BCA notified Cross to delete or take down their copyrighted works on Cross. However, Cross, a decentralized NFT exchange service, claimed that it did not have the authority or power to remove the infringing works, and in fact could not remove them.[26] Anonymous users has still minted NFT on Cross today. However, BCA has not brought suit against CROSS yet.[27]

3. Bigverse case

Different from the Cross, the Hangzhou Internet Court in China held that The NFT platform Bigverse was held liable for copyright infringement in a situation where a third party used the platform to mint and sell an NFT without the consent of the copyright owner because of NFT platform's active role, noting that: (i) NFT platforms charge fees for minting and selling NFTs and must therefore ensure that these activities are lawful; (ii) platforms have significant control over the digital works and possesses the ability to review and monitor the IP without incurring additional cost during the minting process, platforms only request that the user submits the picture of the NFT artwork, name, introduction, description, tags etc., and can add proof of IP ownership to this list; (iii) ensuring that NFTs are created with requisite authority is important for the NFT eco-system; and (iv) once on the blockchain, it is almost impossible to delete an NFT when compared with infringing copyrighted works on the internet.

4. Controversy in Korea

There has been no case about Metaverse in Korea Court decision and only Korea Music Content Association, comprised of major domestic and foreign music publishers and distributors, issued a press release on January 14, 2022, alleging that "K-pop is being played in game rooms related to 'K-pop' on Roblox, and artist logos and photos are being copied and used without permission. This is not only an infringement of music copyrights, but also infringement of intellectual property rights such as choreography copyrights for K-pop dances and trademark rights for artist names and logos. The Association also claimed that there was a problem with the revenue generated from the sale of K-pop-related digital products within Roblox, as they are generating revenue through the sale of artist costumes and fan club pom-poms that are reproduced without permission from the rights holders.`[28]

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[26] NFT Market Rapidly Growing, Copyright Disputes Growhttp://www.coindeskkorea.com/news/articleView.html?idxno=73213. In fact, technically, the InterPlanetary File System (IPFS) only allows users to delete data on their own disk, cannot be deleted certain data on the network-wide.

[27] In a similar case, when Trevor Jones, creator of the programmable artwork "Eth Boy" accused OpenSea of selling his artwork without his consent. OpenSea immediately took it down from the website. This means NFT may be taken down by Metaverse operator. https://www.deviantartsupport.com/en/article/how-do-i-request-a-takedown-from-an-nft-marketplace. However, the OpenSea does not provide how to find the link of illegal materials.

[28] https://www.etnews.com/20220114000069

VI. Issues that may arise

1. Freedom of Panorama[29] Issues

Freedom of Panorama is the legal privilege for users in some countries to publish pictures, image or video of artworks, such as sculptures, paintings, photography, buildings that are permanently in places open to the public, even while they are protected under copyright. However, in other countries, the artworks in the public place is not allowed to be used for publishing under Copyright Act or other Acts. Therefore, the users who take a photo copyrighted works would not be authorized to post it on social media or Metaverse. In other words, it means because Freedom of Panorama varies from country to country, when works that are exhibited at all times in a place open to the public are used in a commercial or non-commercial Metaverse, the operator of Metaverse should be used with caution. This doctrine has been disseminated in EU countries and this early legislation may be attributed to an appropriate debate on the application of copyright on the Internet. The Freedom is very early attested in prospective works on IT law and digital practices and now it will be more important in Metaverse.

(1) The Origin of Panorama Freedom

While photography and other methods representing public space were severely restricted, due to the Copyright Act and other Acts which protect privacy or cultural heritage[30] from 18th century, the concept of Panorama Freedom originated in the Kingdom of Bavaria which introduced an analogous exception in 1840 for pictorial depictions of works of arts and architecture in place open to the public to reduce the severity of the new copyright rules of the German Confederation which prohibited the reproductions. Other states of the Confederation soon adopted the similar legal provision, and in 1876, the legal right, based on Bavarian exception, was finally implemented throughout the confederation by the German parliament.

(2) Current Regulation in Each Nation

1) Freedom of Panorama is closely related to process of communication technology, such as photography, industrial lithography. To protect general person who reproduce the arts which are in the public place, Article 5(3)(h) Directive 2001/29/EC provides a Freedom of Panorama on use of works in the public palce, which is an optional exception for EU member states. The nature of this optional exception has led to a different regulation in each country. Some EU member states the use of works in public spaces falls under copyright infringement, while other member states have introduced the exception of Article

[29] Panorama freedom is a doctrine that permits taking photographs and video footage and creating other images (such as paintings) of buildings and sometimes sculptures and other works permanently located in a public place, without infringing on any copyright that may otherwise subsist in such works, and the publishing of such images. The scope of panorama freedom doctrine is different from nations. Therefore, Metaverse operators need to understand PANORAMA FREEDOM in order to operate their services globally.

[30] The Papal States and the Kingdom of Naples prevented the reproduction of archeological remains, exhibited in the open space to the public in early 18th century.

5(3)(h) Directive 2001/29/EC to varying degrees. And moreover, some Country's regulation of artwork in public spaces exceeds the scope of copyright. Therefore, Metaverse operators that provide commercial services on a global scale should be used with extreme caution, as various intellectual property issues may arise when copyrighted works in the public place are used in the Internet.[31]

2) In France, the Freedom of Panorama was prevented in the late 19th by prohibiting photography in public places to protect the privacy. Therefore, the initial debate on the Freedom was not focused on copyright, but on privacy or theoretical patrimonial rights of the architects. But On 7 October 2016, the French Parliament adopted a provision recognizing a limited the freedom of panorama that allows the reproduction by only individuals of buildings and sculptures permanently located in public space only for non-commercial use.[32] When Nike with an events company organized a publicity stunt which involved dressing statute of Churchill (situated on Avenue Winston Churchill in Paris) in an oversize basketball jersey to celebrate the success of the French national team in 2011, French sculptor, Jean Cardot brought suit against Nike which used images of the statue thus attired in the no. 9 basketball jersey for publicity purposes. The Tribunal de Grande Instance found that Nike had infringed Cardot's copyright and his moral right, because French has limited Freedom of Panorama solely to noncommercial use of images by natural persons and because Nike did not identify him as the author of a work.[33] Not satisfied with this court decision, plaintiff, Jean Cardot appealed and Paris Cour d'Appel increased the damage compensation (60,000 Euros for copyright infringement and 7,500 Euros for infringement of moral rights). This case suggests that Metaverse operators which is not a natural person should be wary of commercially and intentionally using works that are exhibited in public at all times, as they must identify the author's name and obtain permission from the copyright holder to use the work in public place. A similar approach has been taken in Bulgaria,[34]in Denmark[35].

3) Greece and Italy currently do not recognize Freedom of Panorama. Greece Copyright Act permits only the incidental reproduction and communication of images of works located permanently in open place to the public by the mass media.[36] However, it cannot be seen as Freedom of Panorama since the use of

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[31] There is currently a lot of debate about whether freedom of panorama should be introduced all over the EU. (https://www.europarl.europa.eu/news/en/headlines/security/20150701STO72903/debate-should-the-freedom-of-panorama-be-introduced-all-over-the-eu). EU Parliament rejected plan to abolish Freedom of Panorama. https://www.streetshootr.com/eu-parliament-rejects-plan-to-abolish-freedom-of-panorama/.

[32] Article L122-5 11° Reproductions and representations of architectural works and sculptures, permanently placed on the public highway, made by natural persons, excluding any use of a commercial nature.

[33] moral rights are perpetual in French law https://iclg.com/practice-areas/copyright-laws-and-regulations/france.

[34] Bulgaria: Law on Copyright and Neighboring Rights (as amended up to 2011). accessed 10 December 2018.

[35] The Consolidated Act on Copyright (n 3)

[36] Greece: Law No. 2121/1993 on Copyright, Related Rights and Cultural Matters https://opi.gr/images/yliko/n_2121_1993_en.pdf. Incidental, noncommercial use does not need the consent of the author or any payment.

works is permitted only in the mass media and has only occasional significance. There has been also no Freedom of Panorama in Italy, because its prevention began to protect the cultural heritage rather than copyright since the Papal States and the Kingdom of Naples' prohibition of the reproduction of archeological remains, frequently exhibited in the open space to the public in early 18th century. Article 108(3) of the Code of the Cultural and Landscape Heritage of Italy permits the reproduction of works relating to cultural heritage.[37] No fee is charged for reproduction carried out by an individual for private use or educational purposes if the image is not used for profit. However, this rule has fairly narrow scopes as it applies to works that have already entered the public domain. As for works that are under copyright protection, there is no legal provision for the use of images of such works. In Italy, when a local bank reproduced the image of Teatro Massimo in Palermo which was the famous monument in its own advertising campaign to promote the regional agencies without any authorization of the authority in charge and fee, the Teatro Massimo Foundation which has an ownership brought suit against defendant to pay a compensation for pecuniary damage for the missed collection due as concession fee. The Court of Palermo held that defendant, the bank, should pay the compensation for damage due to the unlawful use for advertising purposes of the image of Teatro Massimo in Palermo under Art. 107 and Art. 108 of Italian Code of Cultural Heritage even though the defendant argued Freedom of Panorama.[38]

4) In Germany, the debate about the Freedom of Panorama began in terms of copyright law, similar to the debate in modern society, and artistic works in spaces open to the public began to be allowed as an exception to copyright.[39] Under section 59(1) of the German Copyright Act (UrhG), it is permitted to reproduce, distribute and make available to the public works located permanently on public paths, roads or open spaces. And, section 59(1) applies to all types of works (artistic works as well as to pictures of poems and song lyrics inscribed on monument) as long as they are reproduced by painting, photography, or audio-visual works. However, for the Freedom to apply, two factors must be met: the copyrighted work must be located in the "place open to the public" and the work needs to be located there "permanently."

a. place open to the public

Despite the somewhat ambiguous terms, if anyone may observe a work from public place, the work is located "in" a place open to the public. The most important issue for Freedom of Panorama is not the work is in the public place, but in the place from where the photograph is taken. Therefore, if a painting is exhibited in a public street,

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[37] Italy: Codice dei beni culturali e del paesaggio, ai sensi dell'articolo 10 della legge 6 luglio 2002, n. 137 http://www.normattiva.it/urires/N2Ls?urn:nir:stato:decreto.legislativo:2004-01-22;42

[38] The current Italian Act on cultural heritage, which only allows non-commercial use of cultural heritage goods.

[39] In 1837, the *German Confederation* approved a new author right disposition against reproductions ("*gegen den Nachdruck*"). As was the use at the time, it made a special case of mechanical reproduction ("*auf mechanischem Wege*"). The reform aimed to establish a common standard on copyright law within the Confederation (with a minimal protection length of 10 years). Several members of the German Confederation quickly attempted to soften some aspects of this stricter legal frameworks — a process somewhat analogous to the subsidiarity principle in the contemporary EU. Three years later, in 1840, the Kingdom of Bavaria edicted the very first "freedom of panorama": an exception to this general rule regarding the "work of arts and architecture in their exterior contours" situated in a public space.

photographs of the painting taken from that street enjoy Freedom of Panorama, but photograph of the very same painting taken from a non-public place does not. Accordingly, the Federal Court of Justice held that a picture of a building taken from a privately owned apartment across the street did not comply with the requirements of § 59(1) because the balcony is not a public place.[40]

When a photographer has used special tools (such as a drone) to take the picture or has taken the picture after removing objects that otherwise would have shielded the work from the public eye, section 59(1) cannot be applied to the photograph because the general public can't see the work from the public place.[41] There are some controversies as to whether drone should be treated as impermissible tools, but many scholars state it is.[42]

Whether a place is "open to the public" for section 59(1) depends on its actual accessibility and many scholars state that publicly accessible station halls, subway stations, museums, churches, etc are not place open to the public because they are not in the same way dedicated to the public as streets, ways, or public open spaces, but the place does not need to be accessible all the time like park (which is closed at night). Therefore, a sculpture in a park can be reproduced for commercial purposes, but a sculpture in a museum cannot be reproduced and used because the Freedom of Panorama theory does not apply.

b. Permanent

To meet the factor, a copyrighted work does not need to be located during its entire existence. According to the Federal Court of Justice, the proper test is whether an objective observer would reasonably think that a work exhibited in a public place is not merely a temporary exhibition.[43] Therefore, a work is permanently located in a public place if the work is intended to remain in the public place for a long, indefinite, period of time when the general public think. However, it may meet permanence in a public place, while a work does not need to remain in the same place. Accordingly, a protected work of art on a movable thing such as ships, cars meets the "permanence" condition because the work in movable thing is intended to be located for a long time in (different) public places.

3. Prohibition of Alteration

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[40] Bundesgerichtshof 5 June 2003, case I ZR 192/00 Hundertwasser-Haus, (2003) 105 GRUR 1035, 1037. The irony is that in Hundertwasser-Haus case, the author is from Austria and the work exists in the Austria, but the author sued the photographer who is a German because the scope of the Freedom of Panorama in Germany is narrower than that of Austria, and the author won the case.

[41] However, the regional court of Frankfurt am Main ruled that it is allowed to photograph copyrighted works even from the airspace and to use the resulting images for commercial purposes, provided that the works are in public spaces. https://mueller.legal/de/aktuelles/drohnen-fotografien-von-urheberrechtlich-geschuetzten-werken-fallen-unter-die-panoramafreiheit

[42] See C Czychowski, "§ 59" in A Nordemann, JB Nordemann, and C Czychowski (eds), Fromm/Nordemann: Urheberrecht (12th edn, Kohlhammer 2018) para 7; G Dreyer, "§ 59" in G Dreyer and others (eds), Heidelberger Kommentar Urheberrecht (4th edn, CF Müller 2018) para 6; M Vogel, "§ 59" in U Loewenheim, M Leistner, and A Ohly (eds), Schricker/Loewenheim: Urheberrecht (6th edn, Beck 2020) para 22; CG Chirco, Die Panoramafreiheit (Nomos 2013) 142ff. Contra T Dreier, "§ 59" in T Dreier and G Schulze (eds), Urheberrechtsgesetz (6th edn, Beck 2018) para 4. See the Wikipedia article in German for additional references.

[43] Bundesgerichtshof 24 January 2002, case I ZR 102/99 Verhüllter Reichstag, 150 BGHZ 6, 10f.

Even though Section 59(1) of German Copyright Act allows reproduction of work in public place under Freedom of Panorama, the Section does not allow the modifications of the depicted work. Therefore, when a photographer of a work in the public place changed the color of the work or digitally added something, the photographer cannot enjoy the Freedom of Panorama on the work. Even though a work in the public place may be used without consent of copyright owner, German Copyright Act requires the user should acknowledge the source of the work, which includes the name of author to identify the copy of the work that was depicted.[44]

5) The United Kingdom has also long applied a similar provision, because of the risk to which a citizen who was photographing or sketching in any urban neighborhood would be exposed. This reasoning has been legislated in 1988 as Section 62 of the *Copyright, Designs and Patents Act*. The Section 62 is only applied to buildings, and sculptures, models for buildings and works of artistic craftsmanship. The Freedom under UK CDPA does not apply to the graphic works in the public place such as painting, drawing, diagram, or similar work. Therefore, it is not permitted to photograph of a painting exhibited in an open public space cannot be uploaded to the Internet or the Metaverse without consent of copyright holder. What is difference between two? According to the court decision, works of artistic craftsmanship such as hand-painted tiles, stained glass, etc. may be applied because works of artistic craftsmanship is provided in the section 62.[45]

Because 'public art' works may express the identity of a social community, they can embody cultural, social, historic, commercial, and touristic value. As such, they are more than just simple works under copyright. Therefore, public funding has almost always been provided for the creation or the preservation of public art, giving some argument in favor of the rights of the public to its urban space. with this funding, Italy, Greece enforces a charging policy for the reproduction of antique public domain works such as David statue created by Michelangelo. However, the public funding to preserve the public art or cultural heritage is for all persons and all humans in the world. Thus, everyone in the world should enjoy the copyrighted works or cultural heritage in the place open to the public and should be used without special limitations. Because current Freedom of Panorama varies by country, a Metaverse operator may be forced to offer different services in different countries and this may not fulfill the Metaverse's goal of making the virtual world indistinguishable from the real world. Freedom of Panorama should be accepted without considering copyright for all human who will enjoy the arts in the open place.

(3) Korea

The backgrounds used in the Metaverse for Digital Twin are either newly created or visualizations of real-world backgrounds. However, since the Metaverse is a connection between the real world and the virtual world, if possible, the real world is used, and in Digital Twins which is one of Metaverses, the background is made

[44] German Copyright Act Section 63.

[45] Hensher v Restawile [1976] AC 64

identically to the real world. However, in such a case, copyright issues such as Freedom of Panorama are likely to arise because the Metaverse operators use the copyrighted works without permission of a copyright holder.

To solve this issue, Article 35 of the Korean Copyright Act provides the following.

Article 35 (Exhibition or Reproduction of Works of Art) (1) The holder of the original of a work of art, etc., or a person who has obtained the holder's consent, may exhibit the work in its original form: Provided, That where the work of art is to be permanently exhibited on the street, in the park, on the exterior of a building, or other places open to the public, the same shall not apply. (2) Works of art, etc. exhibited at all times at an open place under the proviso of paragraph (1) may be reproduced and used by any means: Provided, That in any of the following cases, the same shall not apply: 1. Where a building is reproduced into another building; 2. Where a sculpture or painting is reproduced into another sculpture or painting; 3. Where the reproduction is made in order to exhibit permanently at an open place under the proviso of paragraph (1); 4. Where the reproduction is made for the purpose of selling its copies.

Article 35 of Korean copyright Act does not define "exhibition," but scholars generally define it as "the exhibition or posting of a tangible object in which a work is embodied so that the public can freely view it."[46] In Article 35(1), a "place open to the public" is the exterior of a building, not the interior, such as a street, park, or the exterior wall of a building that is freely accessible to the public. Therefore, the original copyrighted work may be exhibited in a place open to the public only with the consent of the copyright holder. And Article 35(2) further provides that "with the consent of the copyright holder, artistic works that are exhibited at all times in a place open to the public may be reproduced and utilized by any means."

Under this interpretation, paragraphs (1) and (2) of Article 35 of the Copyright Act are unproblematic and the Metaverse operator may reproduce the copyrighted works in the open place to the public. However, Article 35, which purports to allow Freedom of Panoramic, has some issues for the Metaverse.

Article 35 of the Korean Copyright Act applies only to original works that are exhibited in the place to the public at all times with the permission of the copyright holder. Therefore, Article 35 is unclear about whether an original work that is temporarily displayed in public without the copyright holder's permission may be reproduced, whether an original work or reproduced work that is permanently exhibited in public without the copyright holder's permission may be reproduced. Moreover, in a Metaverse such as a Digital Twin that makes a virtual world based on the real world, it is necessary to be able to reproduce works exhibited in the real world regardless of whether they are original or not, whether they are legal or not. However, Article 35 of the Copyright Act is difficult to apply in such cases, so there are some problems that it is not clear to what extent the exhibited works in real world

[46] Kang, Shin-Ha, Copyright Law (2nd Edition), Jinwon, 2014, p. 295; Oh, Seung-Jong, Copyright Law, Bakyoung. p. 454.

is available in the Metaverse.

However, in the Golf Zone case, which is a virtual reality that is very similar to the current Metaverse, the Seoul Court of Appeal held that 'place open to the public' means an open place that may be freely seen by an unspecified number of people as long as they want, but because each golf course in the case is private one, general public cannot access to the golf course and thus each golf course cannot be place open to the public and because 'may reproduce and use' means simple reproduction, to make this kind of virtual world which is a derivative work of an original golf course is not allowed under Article 35.[47] Therefore, it may be difficult to apply Article 35 to operate Metaverse in Korea.

If Article 35 of the Copyright Act does not apply to Metaverse, fair use provision under Article 35-5 may be considered. However, the Supreme Court of Korea held that because simulation game such as Golf Zone is not complementary goods, but substitutional goods, it was difficult to apply fair use provision to the Golf Zone.[48] Therefore, according to Supreme Court's holding, it is very likely that the exterior of a building that is only accessible to a limited number of people can be created as a virtual space, a Metaverse, only with the permission of the copyright holder.

2. Issue about Using uncopyrighted works

In 1996, JudyA. Juracek who was a professional artist photographed unique surfaces for her set design research through world travel and she published the book, "Surfaces", which consisted of 1,200 photographs of various materials from wood to glass and which came with a CD containing low-resolution photographs which could be used for personal use and contact information to reach Juracek for those interested in commercial license. After Juracek identified her photo in Devil May Cry, Resident Evil, and Resident Evil: The Umbrella Chronicles, she filed a complaint alleging that Capcom Co., Ltd. used her copyrighted photo for textures in the game and logo of Resident Evil 4, without permission.

Although, in U.S. or some nations, the photos are copyrighted, it is very likely that their creativity is not be recognized in Korea because these photographs are exact reproductions of existing physical objects. However, even if there is no issue under copyright law, it may not be used in Metaverse under Korean Law. This is because it may fall under Article 2 of Korea's Unfair Competition Prevention Act, which states that it is an act of infringing on the economic interests of others by unauthorizedly using the results of another's substantial investment or effort for one's own business in a manner contrary to fair commercial practices or competitive order.

It is likely that many future Metaverse systems will utilize copyrighted works. However, even if the copyright has lapsed or the works are not copyrighted, the photographer traveled around the world to take high-resolution

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[47] Seoul Court of Appeal, Dec. 1, 2016, Decision 2015NA2016239.

[48] However, according to some scholars' study, a simulation game such as Golfzon is a complementary goods, not but substitutional goods. (GolfZon price target raised, "Growing golf population drives demand for screen golf" https://www.businesspost.co.kr/BP?command=article_view&num=278176); Jun Jung, *et. al*. An empirical study on the substitutability and complementarity of screen golf and field golf on the substitution and complementarity, The Korean Journal of Economics Vol. 23, No. 1 (Spring 2016);

photographs, invested a considerable amount of money to take these photographs, and actually generated revenue by licensing these photographs, so it can be seen as an act of infringing on the economic interests of the photographer by using the performance of others in a way that violates the competitive order under Article 2 of the Unfair Competition Prevention Act. In a similar case, our Supreme Court held that although a golf course is not a copyrighted work, "the golf course itself is the work of the designer, but the comprehensive 'image' of the golf course in this case, which combines the terrain, landscape, landscape elements, and installations that are externally expressed by actually building the golf course on the golf course site, is the result of the substantial investment and effort of the plaintiffs (the owners of golf club) in building and operating the golf course apart from the design of the golf course, and the defendant, which is in competition with the plaintiffs, did not obtain the consent of the golf course company. The activity of creating and using a 3D golf course image for a screen golf simulation system that reproduces the appearance of a golf course almost exactly is an act that infringes on the economic interests of the plaintiffs by, without authorization, using the achievements of the above plaintiffs for the defendant's business in a manner contrary to fair commercial practices or competitive order." In Korea, the possibility of infringement of the Unfair Competition Act exists in such cases, so Metaverse companies should consider article 2 (Ta) of the Korea Unfair Competition Act.

3. Jurisdiction and Applicable Law in Copyright Infringement Cases

Copyright infringement may occur between creators in a Metaverse, between a real-world right holder and a Metaverse actor (user and/or platform), or vice versa. In the case of a domestic Metaverse user suing a foreign Metaverse actor, the domestic right holder suing a foreign Metaverse actor, or a domestic Metaverse actor suing a foreign resident in the real world, jurisdiction and applicable law are at issue, and when a foreign right holder sues a domestic infringer in a Korean court, only applicable law is at issue.

(1) Jurisdiction

In the case of copyright infringement, if an overseas Metaverse actor infringes the copyright of a domestic user and the domestic user brings suit against the overseas Metaverse actor in Korean court, simply having access to the Metaverse platform in question in Korea is not enough to recognize jurisdiction because of Article 39(1)[49] of the Korean Private International Law (hereinafter KPIL); Therefore, the domestic copyright holder should to prove that the foreign infringer made the infringing work available to domestic users or that it was actually used by domestic users. If the jurisdiction of Korean court is recognized under Article 39(1) of the KPIL, the Korean court may hear only infringements that have occurred in Korea in accordance with Article 39(1), proviso (2) of

[49] Article 39 (Special Jurisdiction over Lawsuit Regarding Infringement of Intellectual Property Rights)
(1) A lawsuit regarding the infringement of intellectual property rights may be filed with the court, in any of the following cases: Provided, That this shall be limited to the results which have occurred in the Republic of Korea:
1. Where such infringement has been committed in the Republic of Korea;
2. Where the results of such infringement have occurred in the Republic of Korea;
3. Where such infringement has been committed against the Republic of Korea.

the Act, which limits the scope of the court's jurisdiction to infringements that have occurred in Korea. On the other hand, if an overseas user sues a domestic infringer in a Korean court, the general jurisdiction of the Korean court will be accepted and Korean Copyright Act will be applied to the infringement.

(2) Applicable Law

As the rule for determining the applicable law of intellectual property rights, KPIL Article 40 provides, under the title 'Protection of Intellectual Property Rights,' that "The protection of intellectual property rights shall be governed by the law of the country in which such rights are infringed." However, the language of Article 40 is ambiguous because it does not clearly define the applicable law for matters relating to intellectual property rights other than infringement. It is evident that the governing law of copyright infringement (remedies as well as infringement) occurring in Korea is the Korean Copyright Act in matters where the jurisdiction of the Korean courts is recognized pursuant to Article 40 of the KPIL. If a domestic right holder bases its jurisdiction on Article 4(2)[50] of the KPIL and seeks compensation for damages occurred in a foreign country, the issue of infringement in a foreign country and the remedy for such infringement may be governed by foreign law. However, due to the nature of online infringement, damages may occur in multiple countries or around the world, and different applicable laws may apply to claims for damages in multiple countries or around the world. KPIL does not directly address this issue, and since it is not practical to apply the law of all countries in the world as the governing law, it may be possible to apply the law of a single countries, depending on the case, by substituting the law of the country in which the infringement occurred for the law of the country to which the infringement is most closely related under Article 21 of the KPIL. In the Metaverse, lawful use as well as copyright infringement may occur. Because Article 40 of the KPIL is generally understood as a provision that adopts *lex loci protectionis*, and because legitimate use is the other side of infringement, applicable law about the legal use of the work is also the law of the protectorate Korean Copyright Act. However, there is still no solution to the issue of how to resolve cases where a legal use in one country is copyright infringement in another, such as Freedom of Panorama.

In addition, there are some preliminary issues such as authorship, originality, work made for hire, a co-author, remuneration, transferability, duration, before whether Korean court decides whether the u of copyrighted works is copyright infringement or legitimate uses (which does not mean license under contract) or not within the Metaverse. For example, in the case of joint works by authors from different countries in a Metaverse, the preliminary issue is who may license the work depending governing law. who is an author of audio-visual works, etc. Although current KPIL does not explicitly provide the governing law of this preliminary issue, so that issue may only be resolved through the interpretation of the court. These preliminary issues may be decided by Korean Copyright Act because these issues are also related to the use of the work.[51]

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[50] (2) For a person, corporation, or organization engaged in a continuous and systematic business or operating activities in or toward the Republic of Korea, a lawsuit in connection with such business or business activities may be filed with the court

[51] According to the *Itar-Tass Russian News Agency v. Russian Kurier, Inc.*, (153 F.3d 82 (2d Cir. 1998)), Russian law determines who is the author of the work and that U.S. law was to be applied to figure out whether a copyright violation had occurred and to judge it.

VII. Conclusions

Many people, including central and local governments and companies, are interested in this promising Metaverse, so it will be applied to many fields in the near future. However, since there is no precise concept of this Metaverse, it is not clear what law should be applied in the future dispute, and even if there is an applied law, there is no clear principle on whether the court should apply domestic law to foreign services and the scope of damages in a dispute because domestic and foreign laws are different. Therefore, the resolution of these issues can only rely on court decisions, but there are few court decisions so far, and even if there are, they are domestic disputes, not international disputes, so court decisions can hardly help solve the issues described in this paper. This paper concludes with the hope that each nation will work together in-depth with WIPO to resolve these issues.