

Reed Smith Guide to the Metaverse

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The metaverse and what it means for business

By nature, lawyers are curious creatures, always eager to learn and react to new ways of doing things. The law is mostly precedential, built on a foundation of prior experience; the result of centuries of human transactions and behavior and the reactions and influence of governments and lawmakers. The concept of the metaverse is, therefore, naturally seductive to lawyers. It is a new world, an evolving, alternative digital environment in which change can happen in the blink of an eye. Driven by the dramatic evolutionary combination of technology, devices, and communication networks, the metaverse offers human beings the opportunity to collaborate, transact, perform, argue, and create as has never been seen before in history. It enables our alternative selves.

There can be no doubt that from a business perspective, the metaverse is now a critically important consideration and influence. People exist there and there is money to be had. Deciphering the law pertaining to these new online environments and being able to guide, advise, and support companies and individuals who operate in them will require both a strong handle on centuries of legal precedent and a mind that is open to adapting and learning new legal skill sets. Our team at Reed Smith enjoys the benefit of one of the longest histories of any law firm; we have been leading advisers in the media sector for more than 100 years. While we are never arrogant enough to think that we can enjoy another 100 years at the forefront, we are excited to engage with and advise our clients during what is undoubtedly the biggest ever industrial revolution the world has ever seen. The next advent of the metaverse and decentralized features of what is becoming known as the Internet 3.0 offers tremendous opportunities for growth and creativity. Although the entertainment and media sector is at the cutting edge of this phenomenon, the rest of the commercial world is close behind: healthcare, finance, energy, logistics and even the more traditional manufacturing industries will soon be affected by what's happening in these new online environments.

We hope that this small and humble overview of some of the legal issues affecting and arising from it will be of use and practical application to those who are curious, as we are, about what the metaverse can become.



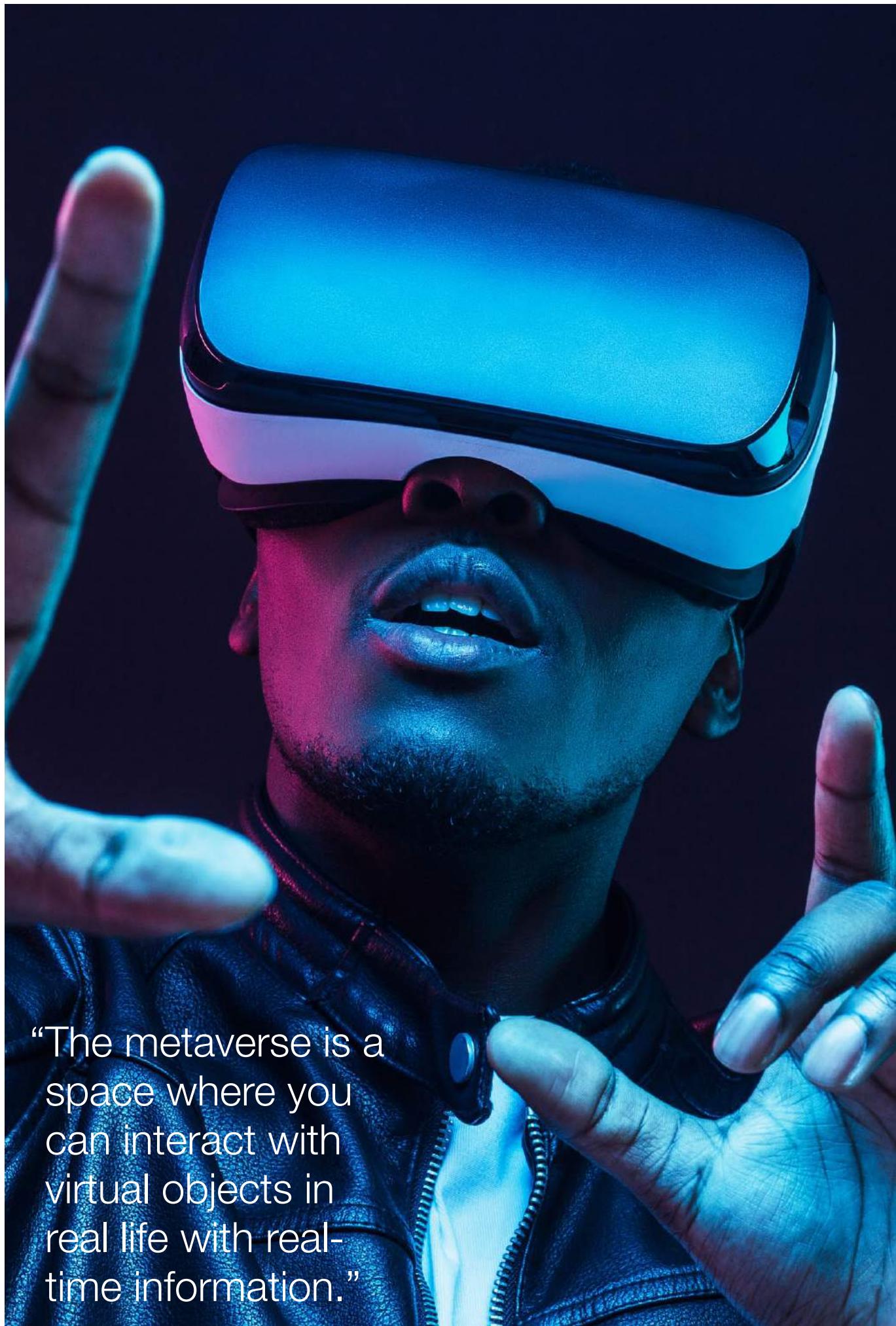
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“The metaverse is a space where you can interact with virtual objects in real life with real-time information.”

What is the metaverse?

The word itself means “beyond the universe,” but what exactly is the metaverse? One way to describe it is the increasing permeability of the borders between different digital environments and the physical world. Imagine stepping into a cyberworld: the metaverse is a space where you can interact with virtual objects in real life with real-time information. It is likely that you have already seen this concept demonstrated in movies and on television programs – for instance, Iron Man,¹ Ready Player One,² Upload,³ and The Feed,⁴ to name a few.

Adopting this literal approach to the metaverse means it is a combination of three elements. First, it is a technology that enables the digital content to be laid over the real world. This is similar to augmented reality (AR). A simple example is the popular smartphone game, Pokémon Go, although in the next iteration of a metaverse, this technology would be enhanced. Digital content is combined with the real world. Second, the metaverse applies a hardware device that enables the real world to be interactive. Digital content is applied so that users can control content displayed virtually and interact with it within a real-life space. Third, it is information about anything and everything in the physical world (for instance, an area, a shop, or a product) and knowledge about the user (such as the user’s schedule, location, habits, and interests). This information will be obtained from the Internet and from machines learning about a user’s everyday actions. A simple example of a device learning based on a user’s every day activities is Siri (on iOS) and Alexa (on Amazon). Real-time information is obtained instantly and virtually through the device into the physical space to optimise a user’s experience, while in the background data is being collated and applied.

A less literal but no less relevant approach to understanding the metaverse is the application of real-world characteristics to a purely online environment. In the same way that digital content can be applied to the real world, a metaverse environment can apply real world features to a virtual environment. For example, players interacting in a virtual gaming environment could walk around a virtual London or New York city, seeing digital depictions of real-life streets and buildings. You can visit a virtual Apple store to browse and buy digital depictions of Apple products that can be delivered, in real life, to your actual physical home. In many respects, this would be only an extension of what we know today as traditional e-commerce. However, as visual technology and design capability improves – driven by hugely powerful game engines such as Unreal or Unity – brands can create metaverse environments that not only replicate a real-life experience, but can improve it. There may be no line outside the virtual Manhattan Apple store when a new product is launched.

The idea of replicating real-life environments in the virtual world is not at all new. After all, Second Life still exists. However, modern-day gaming environments have moved the metaverse far beyond the clunky, socially awkward and often avatar-limited 3D block worlds prevalent at the turn of the century into entirely new, ever-evolving creative online habitats. The critical difference between the metaverse then and the metaverse now is a user’s ability to create. Games such as Minecraft, Roblox and

1. <https://www.youtube.com/watch?v=Ddk9ci6geSs>.

2. <https://www.youtube.com/watch?v=cSp1dM2Vj48>.

3. https://www.youtube.com/watch?v=0ZfZj2bn_xg.

4. <https://www.youtube.com/watch?v=JlHkdRiHk5o>.

Fortnite have changed the way we think about being online. Parents wonder why their children spend so long in these metaverse worlds, and the answer is not that the games themselves are so engaging and the products are so well programmed. Rather, it is because people are interacting, creating and entertaining each other. Whole mini-industries have evolved and exist around these worlds; people are paid in the real world to create virtual products on Minecraft. Real life rock stars fall over each other to create and perform virtually on Fortnite. Millions of people participate in events that happen only in these metaverse environments.

How does the metaverse work?

A device is highly likely to be necessary to connect the user to the metaverse. This device might be a pair of goggles, a head-mounted apparatus with a camera feature, or a new invention we have yet to see. Such devices are not critical to joining in the metaverse, but definitely can amplify the experience. “Wearing” a device will connect the user to the metaverse by integrating all of the elements and displaying the interactable virtual objects in real life. Applying this concept to everyday life, you wake up in the morning, put on your goggles, and you enter the metaverse. Sounds like science fiction? Not really; after all, this is what Google Glass was originally intended as.⁵ As you walk down the street, virtual information you can see and interact with will appear. It may be that you are walking to the train station and a virtual message notifies you of severe train delays. You can then select to go by an alternate route, which will be quicker – perhaps by bus or car pool. The interaction will mean that you are able to react to the virtual objects; everything is displayed in real time, in front of you, in the physical world. Imagine you are Tony Stark.⁶ You talk to your personal artificial intelligence (AI) assistant, who will find and show you the information you need virtually, in the real world. You can then view, click through, or act on those objects.

While such an advanced reality may be disconcerting, the fundamental elements of it are already widely adopted through mobile technology. Your device knows you, it knows where you are, and when. While the visual interfaces may change over time, the underlying capability needed to combine the physical and virtual world has existed for over a decade.

In the purely online world, the metaverse works by offering an escape from reality. Users can embark on adventures within Fortnite, and can – if they so choose – lead an alternate life. The significant shift in recent years has been the introduction of real-life elements into this escapist paradigm. Want to watch a movie within Roblox? Want to buy some sneakers while playing Grand Theft Auto? Want to see the latest live performance by a K-Pop band on TikTok? It is this migration of commerce and interaction online and into virtual environments, and the increasing confluence between virtual and real-life, that drives the metaverse.

What are the commercial applications of the metaverse, and who will benefit from it?

The metaverse will alter the way we act, socialize, work, and live our lives. Just some of the potential commercial applications are discussed here, but there are business opportunities for participants in every sector, from consumer-driven industries, such as retail and events, to manufacturing, construction, and beyond.

Purchasing items can be instantaneous. When you see a product in a store or on the metaverse, you will not need to open an app or even touch your smartphone. Products can be purchased and prices can be compared through one account and in one place. This increased connectivity means that goods will be more accessible, and businesses will be able to sell their goods worldwide – regardless of the geographic location of the stores.

5. Google Glass is now largely an enterprise product, but thriving and on its second release.

6. [https://marvel.fandom.com/wiki/Anthony_Stark_\(Earth-616\)](https://marvel.fandom.com/wiki/Anthony_Stark_(Earth-616)).

The reach, immediacy, and interactivity for businesses and celebrities will be significantly increased, with greater opportunity for collaboration. Consumers will be able to interact with brands directly. User engagement will be higher, which is likely to have a positive commercial impact if used properly. Exposure for brands and celebrities will increase, and there might also be the potential to own or sell virtual space in the metaverse.

There will be further emphasis on digital goods and property such as non-fungible tokens (NFTs). Items that can be traded can become more marketable because they are not prone to any wear and tear. For gaming, the players can expect more interactive experiences and connected game worlds. An item or skin purchased in one game may be used in another game or may be traded. Social experience will also change as virtual cinema will enable private viewings with friends. As the way we meet, work, and socialize will change, there will be new ways to monetize for many different industries, in particular, media, social media, technology, and retail. Intellectual property will become an important consideration as there will be different means of creative work.

Ultimately, consumers will gain most from the metaverse as information, products, entertainment, and social experiences are enhanced and more accessible. Hardware technology companies and software development companies will dominate the technology market. The demand to provide hardware and software for the metaverse will drastically increase. Businesses will have the opportunity to create their own place in the metaverse. Brands and celebrities will have more exposure to wider audiences. The capability to offer richer, more targeted commercial promotions and experiences to consumers will increase.

And finally, how could we forget? There will also be a need for legal advice due to the uncertainty of the law and regulations around the metaverse. As we write, there is huge demand for advice in areas such as data protection, privacy, and advertising regulations – and to ensure that commercial enterprise intellectual property assets are protected as the virtual and real world converge. This explosion of interest in ensuring that real-world laws are effectively translated into the virtual world will continue to challenge lawyers and lawmakers for years to come.

Who is building the metaverse?

Perhaps one of the biggest business use cases of the metaverse today is found in the gaming industry. Games like Fortnite and Roblox give us an insight into the potential of the metaverse to change the way that users engage with their digital and physical worlds. It is no surprise then that many of the big names in the gaming industry are also at the forefront of technology and development in this area.

Take Roblox as just one example. The gaming company, which went public in March 2021, set out in part in its prospectus⁷ its vision for the company and the adoption of the metaverse. The goal for Roblox – as computing power, high bandwidth Internet connections, and human interface technologies improve – is to create a pervasive human co-experience platform that allows users to connect, learn, play, and work together (and even to build an economy based on its own currency, Robux). This is arguably the next iteration of Linden Labs (creators of Second Life), which also created its own currency and which at one time had a GDP bigger than some small countries.

7. https://www.sec.gov/Archives/edgar/data/1315098/000119312520298230/d87104ds1.htm#rom87104_10.

User experience in this context is just one component. As eluded to above, the word “metaverse” is derived from the prefix “meta” (meaning beyond) and the stem “verse” (meaning the universe). For the proposition of the metaverse to reach its true potential, critics agree that a number of key attributes must exist, including being the following: persistent; able to provide live, synchronous experiences; interoperable; and value creating. Although it is a point of debate, this means that the metaverse is unlikely to have a single entity building it or operating it, with instead many stakeholders (individuals, commercial enterprises, governments, etc.) contributing to its existence – much like the real world.

This makes sense. The metaverse, as with the present day Internet, demands and creates opportunities for new technology, products, service providers, content creators, standards and protocols, rules and regulations, and more, which in turn requires a community of stakeholders to build. Naturally though, many of the giants in the technology industry today, such as Microsoft, Facebook, and Unity, will likely have a (big) role to play – from Microsoft’s AR headset HoloLens, Facebook’s recent investment in VR and immersive technology with its purchase of Oculus VR, or Unity’s significant investment in the concept of digital twins.

There is no general consensus on how the metaverse will definitely work in the future, nor who will build it or who will “own” it (if anyone). But what can generally be agreed on is that it will exist and is no longer just a conception of science fiction. Watch this space, but don’t hold your breath for a big bang – the metaverse will develop iteratively over time as capabilities evolve and synergies are established.



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“The metaverse will alter the way we act, socialize, work, and live our lives.”

A glowing blue and red wireframe sphere against a dark background. The sphere is composed of numerous thin, glowing lines forming a complex geometric structure. It appears to be a digital or virtual representation of a sphere, possibly representing data or a network. The lighting is dramatic, with the sphere appearing to float in a dark space.

Entertainment and media in the metaverse



Advertising

Virtual worlds – each with their own culture, where consumers can adopt a different persona with behaviors and purchasing patterns that do not align with their real-world habits – provide a challenge and an opportunity to brands looking to engage in the space. The metaverse will provide an additional touchstone for developing relationships with consumers through advertising within the metaverse (think virtual billboards) from sponsorship opportunities for virtual concerts like Fortnite Party Royale (see section the music section), to integrations within and creation of games (for example, Burberry's B Surf and Balenciaga's video game fashion show, "Afterworld: The Age of Tomorrow," a walk-through of the 2021 fall line where people walk past models and clothes floating on the wall). Done well, these direct-to-avatar (D2A) marketing opportunities can lead to digital and real-world purchases and brand loyalty.

While metaverse marketing is not new (Wendy's did a Fortnite integration in 2018), the latest buzzword to hit the industry is NFT (non-fungible token). How can brands incorporate NFTs into their marketing strategy?

Brand- or celeb-themed artwork, memorabilia, or other assets. One way to create buzz for a brand (and raise money) is to create or sell unique brand-themed assets. Taco Bell created five different taco-themed, animated NFTs and released five editions of each in early March 2021. The NFTs sold out in minutes, selling for as much as 1.5 wrapped ether (WETH) or approximately \$2,600 (at the time of sale). NFT products range across industries from traditional consumer packaged goods companies (Procter & Gamble introduced a non-fungible toilet paper called NFTP) to luxury brands (Jacob & Co. is auctioning off a one-of-a-kind NFT watch, with the highest bidder receiving a certificate of ownership, a case with a hard drive containing the NFT, and a digital rendering of a Jacob & Co. watch). Designer Andrés Reisinger sold 10 pieces of NFT furniture that can be

used in any 3D space or virtual world. Finally, the NBA partnered with Dapper Labs to develop a platform to sell NFT memorabilia. A LeBron James highlight recently sold for \$200,000. Speaking of the NBA, the league has its own NFT network called Top Shot. Top Shot has more than 800,000 accounts and more than \$500 million in sales through Q1 2021. What are all of these Top Shot accounts spending their money on? Top Shot lets users buy and sell digital trading cards called "Moments," which contain a video clip of a specific play, stats about the game and player, and a history of sales prices.

Charitable giving. Brands are already using the NFT market to promote good causes. The profits for the Taco Bell NFTs mentioned above will be donated to the Taco Bell Foundation. The P&G toilet paper NFT proceeds went to the charity Direct Relief. Patrick Mahomes' Museum of Mahomes is auctioning off six pieces of one-of-a-kind NFT artwork (some with physical memorabilia as well), with proceeds going to the Boys & Girls Clubs.

Brand collaborations. Limited edition brand collaborations are nothing new to the marketing world, but NFTs open an entirely new world of possibilities. The artist known as FEWOCIOUS partnered with the sneaker brand RTFKT Studios to create virtual editions of FEWOCIOUS x RTFKT shoes, which sold for \$3.1 million in total. Each purchase also came with a physical pair of shoes.

Promotions. The possibilities for NFTs and promotional games are endless. For instance, a brand could embed an NFT in every product it sells with some of them being a surprise and delight NFT, such as entry into a virtual concert or fashion show. Brands are also exploring awarding NFTs as prizes in sweepstakes or other prize promotions. Professional sports teams are looking at developing NFTs for their season ticket holders.

Virtual experiences. The opportunity to use NFTs for virtual experiences is also endless. Musician Post Malone partnered with a social money platform to sell NFTs to play beer pong with him in Post Malone's Celebrity World Pong League. Microsoft launched a game celebrating women in science, which rewards players with NFTs that unlock secret games in Minecraft. Artists are releasing NFT clips of music and events. Finally, a Canadian individual spent 288 Ether (more than \$450,000 as of this week's prices) on a virtual real estate property dubbed the "Mars House."

All of these digital world opportunities come with real-world legal hurdles (discussed in detail below), ranging from rights of publicity (see the content licensing section), to intellectual property (see the intellectual property section), to SAG-AFTRA and other union obligations (see section the music and content licensing sections).



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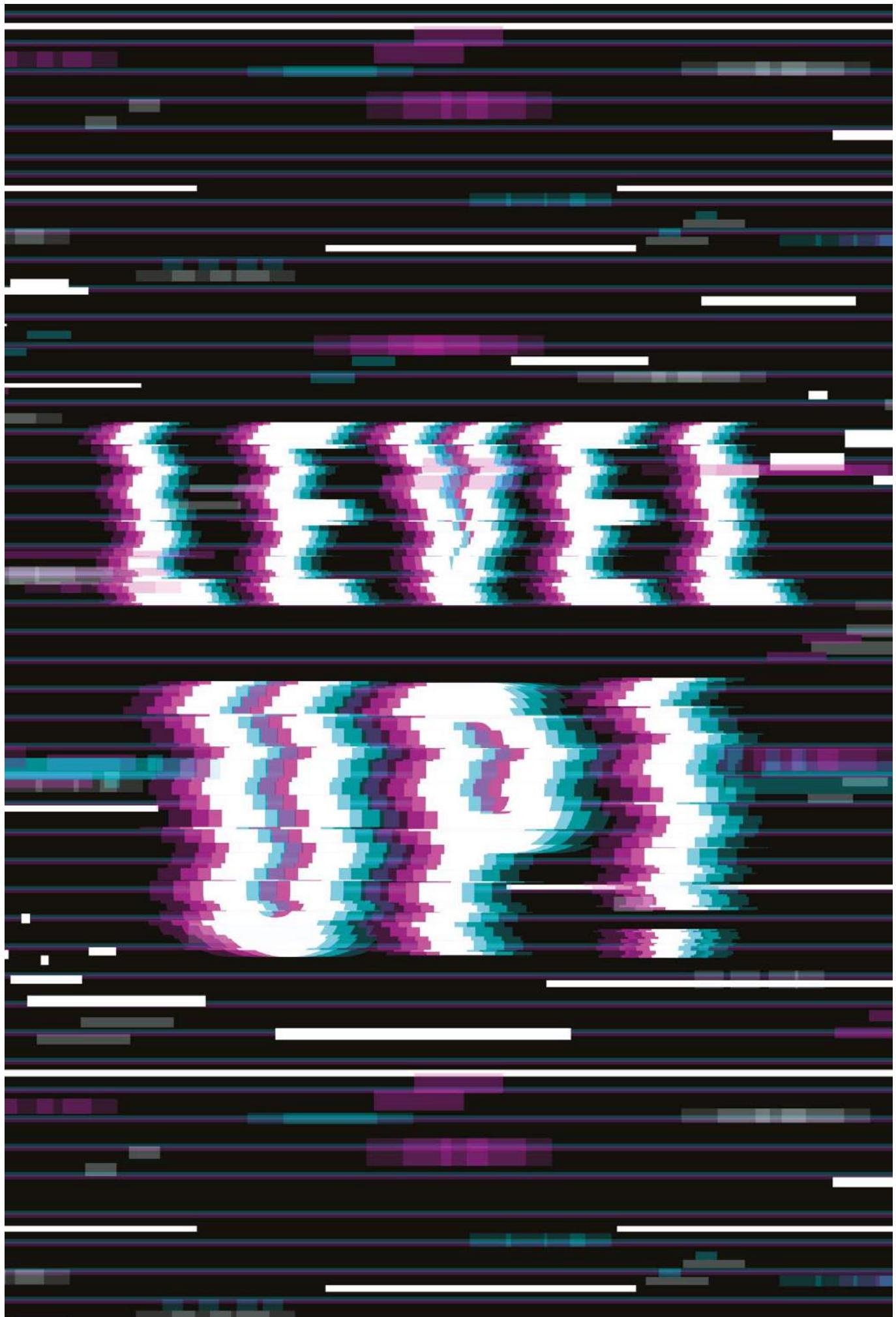


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“The metaverse –
advertising’s next frontier”





Games - an NFT-powered revolution?

A lot of what the metaverse is likely to look like can already be found in the world of video games. In the future, you may enter games through a headset and feel the game through a haptic suit, but at the core, the experience is likely to bear many resemblances to how players today immerse themselves in a game's universe and environment.

So what will change?

As discussed in this document, NFTs as a concept can be applied to pretty much everything that can be tokenized, including in-game assets. If there is an industry that is ripe for the “endowment effect of NFTs” to take hold, it is undoubtedly the games industry.

Games developers and games publishers have long used their players’ desires to unlock special powers, features, and assets as ways of monetizing their games. A powerful technique that can sometimes become frustrating for players is realizing that their “purchases” only last for as long as they play the game the asset has been “bought” in. Open a new game, and all your shiny virtual objects disappear.

In a world where players feel that they “own” their in-game assets, NFTs are seen as a way of “fixing” this problem by making these special games assets sellable to others and portable from one game to another. Both concepts deserve a closer look.

Marketplaces for tokenized games assets. The idea that NFTs can transform a digital asset into something tradable needs to be corrected. In reality, what makes an in-game asset sellable to another player is whether or not the game’s publisher agrees with tradability as a concept and has built the necessary in-game infrastructure to do so. A games publisher allowing in-game assets trading arguably would not need to tokenize its assets on the blockchain in order to do so. A far more simple (and less energy-consuming) solution may do the job just as well. What’s more, by controlling their in-game marketplaces, games publishers would be able to commission each sale and continue to monetize their assets, albeit from a different angle.

From a legal point of view, this in-game solution would be far more in-line with the nature of the transaction really taking place when players “buy” and “sell” in-game assets, which of course has as little in common with a “sale” as Mario and Lara Croft. As discussed in the NFTs section, in-game assets cannot be sold separately from their intellectual property, and you can rest assured that games publishers are not in the business of selling their intellectual property lightly. Also as mentioned when we discussed art NFTs, in-game assets are licenses – not sales: they give you access to the asset for a limited time and within a particular context as (should be) explained in the game’s terms and conditions.

“It is worth remembering that most gamers couldn’t care less about the legal concepts involved when they spend money, as long as they can enjoy a seamless experience.”

Does it mean that in-game assets will never be traded on NFT marketplaces? Probably not. The hype around NFTs is far too intense for logic and reason to prevail, but we would urge caution as licenses are far less easy to trade than property rights and may well cause more than one game NFT to not be worth the digital ink it has been written with.

Portable game assets. Wouldn’t it be great to be able to use that rare sword you leveled up in one game in your next game, and is this something NFTs could make possible? Here again, there is more to the picture. You cannot just take your sword on a trip in the same way you would in the real world. If the sword is not coded in your host game, good luck beheading monsters with it. And why would a game publisher go through the trouble of coding a “foreign” sword when they have some perfectly sharp swords for you to use in their own game environment? Besides, would the maker of the sword (that is, the owner of the intellectual property in the sword) want you to use it outside its game? Unless the two companies agree on working together to enable portability, nothing is less certain. Of course, if the demand from players becomes loud enough, companies will take notice. But we suspect that for some time, in-game asset portability (which may extend to character portability) will be confined to the titles owned by the same games developer.

It is worth remembering that most gamers couldn’t care less about the legal concepts involved when they spend money, as long as they can enjoy a seamless experience. The endowment effect shows how much divergence is likely to continue to exist between what games are made of and what games are believed to be made of.

The infrastructure prerequisite. For the metaverse to be an alternative to the real world, it’s going to have to resemble it with almost complete verisimilitude. Luckily, there is no need for governments to pour trillions of dollars into this sort of infrastructure. The processor and graphics technologies have been incentivized by a red-hot video games market for years, and today we inch closer and closer to absolute realism. Intellectual property and licensing issues will increasingly dominate the conversation as publishers and console manufacturers design and build with those technologies.

Because one can look at video games as a prototype for the metaverse, one cannot escape the inherent limitations of that model when applied to a vision of interoperability. In some ways, the NFT and related tokenization issues are relatively more solvable than those that relate to the underlying infrastructure of the metaverse. Do we have any more reason to believe that the metaverse will resemble one planet on which all human life can love, hate, fight, reconcile, exploit, and heal than we believe one gamer account can be used across all games and all platforms? The intellectual property and attendant license are far more likely to result in multiple metaverses, divided at least by platform configurations if not also by content, genres, and publishing rights. The profit incentive that has ignited the development of the technology will be the very reason the technology will form walls around competing worlds. In this sense, the video game model for the metaverse foretells of the limits that are baked into the infrastructure that will form the metaverse.

There may be those who envision a metaverse that transcends the boundaries of jurisdiction and platform, but they will run headlong into the reality of intellectual property, antitrust, privacy regulation, and the capitalistic spirit that has powered the video game industry for decades. And, speaking of power, the infrastructure for the metaverse is again going to bring with it questions about the energy usage required to run the processors and graphics chips. Video games and the infrastructure providers who pave the way for the next generation of games and perhaps some version of the metaverse again provide a useful guide. Energy usage and issues surrounding sustainability and conservation will become distinguishing factors for companies competing for adoption in games and platforms. With public opinion on a global basis appearing to bend toward a joint goal of sustaining our planet, those seeking to drive the video game experience toward complete immersion will likely need to consider how to be ecologically responsible (both in terms of energy usage and use of sustainable construction materials) rather than just create larger and more voracious appetites for the earth’s resources.

Human nature and the limits of moderation. Another lesson from the online world of video games and platforms that host and promote them is that unchecked, they can devolve into dangerous places. For example, the amendments to the EU Directive 2010/13/EU seek to align the regulation of nonlinear services with linear TV restrictions with respect to the protection of minors and harmful content and contain specific requirements on video sharing platforms (VSPs) to protect minors from harmful content (plus additional issues, including protecting the public from incitement to violence or hatred or content constituting criminal offenses). Among the measures that must be implemented are the inclusion of requirements in the terms and conditions to protect minors and limit incitement to violence; adoption of age verification mechanisms with regard to content that may impair mental, physical, and moral development of minors; creation of a content-rating system where users can rate harmful content; provision of parental control systems; operation of an accessible, transparent system to deal with complaints about videos; and promotion of media literacy.

In the UK, the ICO Age Appropriate Design Code, which becomes effective in September 2021, focuses on the processing of personal data of children (up to the age of 18) and recommends certain default settings for services that are likely to appeal to children, including taking into account the best interests of children when designing any data processing in services; providing a child-appropriate service to all users by default, with an option of age verification mechanism to enable adults to opt out from these safeguards; identifying the age of the children by using robust age-verification measures; providing all relevant privacy information, clearing terms, and community standards by using age-appropriate design codes and appropriate content presentations that will be easily read and understood by a child; and prohibiting the use of data that is detrimental to children's physical or mental health and well-being, or goes against industry codes and government regulatory provisions.

In Germany, the Federal Protection of Young Persons Act (Jugendschutzgesetz - JuSchG), effective in May 2021, is aimed at the protection of children and young persons against harm resulting from media use and to ensure that media is only distributed or made available in accordance with applicable age rating. This includes media and other publications with, among other things, immoral and violent content; presentation in detail of acts of violence, murder, and massacre for their own purpose; or a recommendation of the "law of the jungle" as the only proven tool by which to obtain supposed justice.

In France, there are several laws that relate to online behavior, and one initiative of particular note is a pending French audiovisual reform draft law that provides for the merger of the Conseil Supérieur de l'Audiovisuel (CSA) and the Haute Autorité pour la Diffusion des Oeuvres et la Protection des Droits sur Internet (HADOPI) into a new entity. This new "super-regulator," which will be called the Audiovisual and Digital Communication Regulatory Authority (ARCOM), would have a wide range of new powers, including the ability to regulate online platforms, combat harmful content on the Internet, and improve the fight against piracy.

In the United States, the Child Protection and Sexual Predator Punishment Act (CPPA) and amendments via the Securing Adolescents From Exploitation-Online Act (SAFE) create several duties for online service providers, including a duty to report evidence of apparent child exploitative activities of which the provider becomes aware. The penalty for knowingly and willfully failing to report can result in an initial fine of \$150,000 with subsequent violations carrying a fine of \$300,000. The law provides a limitation of both civil and criminal liability for providers performing reporting or preservation responsibilities under the statute. Beyond this specific law that focuses on sexual predators who might be engaged in criminal acts in a context such as a virtual world, the U.S. Congress appears to have an appetite to revisit the

Communications Decency Act, section 230. Possible changes to section 230 could include incentives to online platforms to address illicit content and create exemptions for immunity in the areas of child abuse, terrorism, and cyber stalking.

The world of video games is increasingly being subjected to governmental oversight to address online harms – at least in the context of children and teens. We have also seen signs in some countries that suggest a willingness to push more liability onto platforms if the platform's programmatic moderation mechanisms fail to moderate content that is deemed to be offensive or unlawful. The fact that dangers can present themselves in various interactive media contexts, including interactive video games, and that regulators in many countries have taken affirmative steps to address them suggests that the metaverse would be subject to similar considerations.

Yet, in the metaverse, it is unclear whether governments could reasonably seek to regulate or promote the sort of moderation that they currently do in the context of video games. If the concept of "platform" becomes amorphous, what liability could attach to a developer who does not impose anti-online harm moderation guidelines? Would the regulators need to engage in the virtual world, almost like Agent Smith in The Matrix? The limitations of moderation in a metaverse conception pose interesting questions about the way the metaverse will address the dark sides of human behavior.



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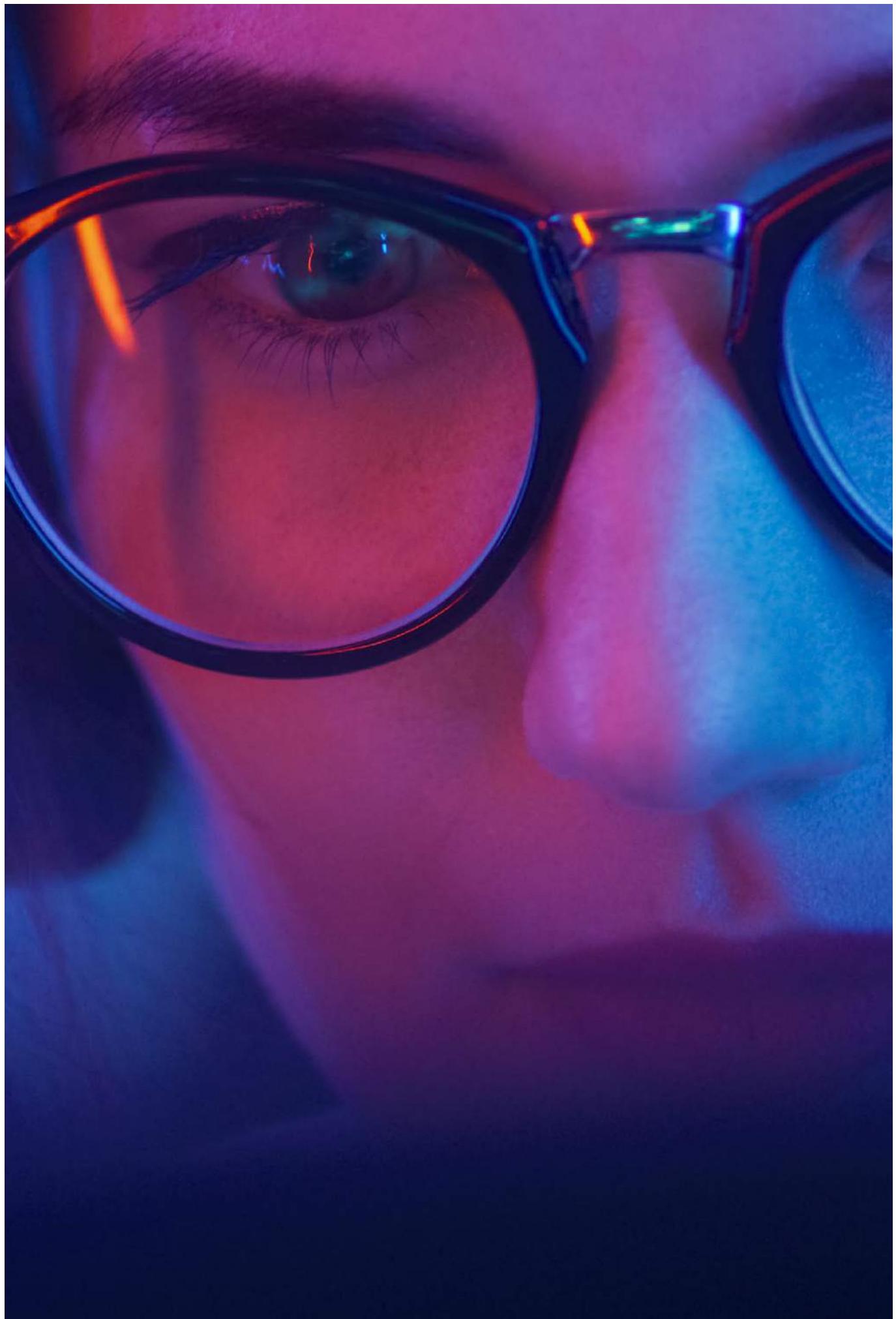


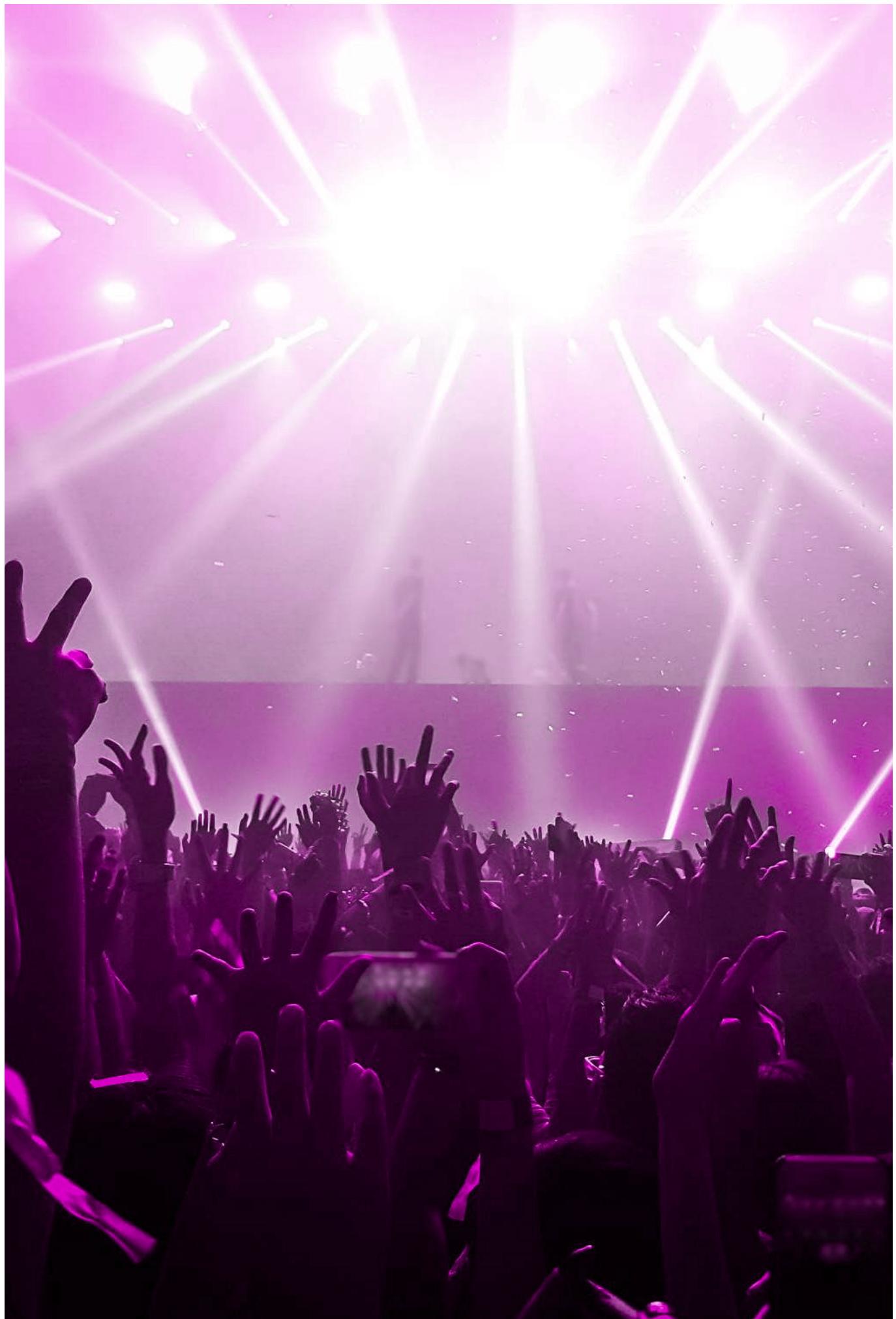
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Music

As one of the first of the content industries to be heavily disrupted and changed beyond recognition in the early days of the Internet, in many respects the music industry has, since the turn of the century, been one of the first to adopt change and new business models online.

Since the possibility of performing and delivering live music performances to large crowds disappeared almost overnight with the advent of the COVID-19 epidemic, the music industry and, particularly, performing artists have been forced to innovate and find new ways to reach their fans. Naturally, they started performing online. It is worth noting at the outset of this discussion that live online streaming is not a new thing – the Rolling Stones were doing it in 1995, and many companies have delivered live streams of musicians over the years, including Internet pioneers such as AOL and Yahoo!, long before musicians started using platforms provided by modern players like Twitch and Facebook.

Several defining characteristics distinguish this new form of music consumption in the metaverse from traditional “vanilla” live streaming or even subscription streaming:

- A walled-garden platform environment
- The ability to build, or perform in, a virtual venue
- The possibility of using an avatar or other visual representation of the artist, sometimes comingled with a true video representation of the artist
- New production capabilities, including manipulating the virtual environment and combining digital visual production with the artist’s own musical production
- The ability to interact with the audience, in real time
- In some instances, the combination of more than one artist performing from a different location or virtual venue

There have been many fantastic examples of this innovative musical art form in recent years, but perhaps the most striking and commercially successful was the Travis Scott performance on Fortnite. The traction and audience for this event were phenomenal, with Scott himself commenting: “It was an opportunity to go to the max, to create a world that permits won’t let you do, fire marshals won’t let you do, building codes won’t let you do.”

Aside from virtual events and NFTs (covered elsewhere in this guide), another metaverse phenomenon affecting the music sector has been the emergence of virtual “artists.” While the idea of engaging with a virtual artist, created by artificial intelligence and not having a human personality, may be anathema to many true music fans, there is no denying that such artists are gaining huge traction among digital natives. A good example is FN Meka, described as a “robot rapper who is known for his extravagant style and Hypebeast aesthetics. He has the appearance of a cyborg with green hair and eyes, lots of tattoos, and a hand made of gold.” While this may all seem to be a bit of harmless, somewhat futuristic fun, it has a foundation of serious commercial potential. FN Meka has over 9 million followers on TikTok. As a means of comparison, at the time of this guide, Chance the Rapper – often spotlighted as one of the new breed of superstar rappers – has fewer than 2 million TikTok followers.

Is the metaverse an opportunity or a threat to music?

As the two prominent examples above demonstrate, the metaverse can be an opportunity and a threat to the music industry. Certainly as the production and experiential capabilities of technology continue to push boundaries and create new consumer experiences, artists who rely on old-style production techniques and traditional channels to reach their audiences risk getting left behind. Some of the more one-dimensional approaches to the music industry – such as purely owning rights and monetizing through subscription streaming channels – will quickly become commoditized and mechanized to the extent that they don't yield the profit margin to make them worthwhile.

Meanwhile, the commercial promise available to those who are prepared to push the boundaries and use all of the available technology to engage and create is galactic. Even the biggest arena tours cannot accommodate anything close to the instant, one-time global audiences that can be attracted to an online metaverse performance. The COVID-19 pandemic, which forced the world to migrate online for entertainment, has shown the music industry that ticketed, cleverly produced and engaging live streaming will be here for the long-term. It is likely that the most significant concerts and festivals that happen in the real world will, in the future, have a more dedicated, slick, and transactional online component. For that reason alone, the metaverse is here to stay in music.

What are the legal issues for music in the metaverse?

As always in music, the primary consideration when music is created, performed, streamed, and exploited online is rights clearances. Mostly, the traditional legal and licensing rules applicable to online exploitation apply equally in the metaverse. However, the proliferation of music, performance, and exploitation within new, closed, or even open online environments adds yet another potential layer of complexity to an already complex chain of rights in the music licensing process.

To take an example, a digital music service provider (for instance, Spotify) could promote and host a live-streamed concert on a global games console platform (let's say, Sony Playstation) during the interval of an eSports tournament that was being held and promoted by a leading games publisher (perhaps, Electronic Arts) working alongside a famous brand (maybe, Nike). To attend the concert, a consumer would need to be a user of the gaming platform and have purchased ticketed access to the eSports tournament. However, the live-streamed concert would only be available to a limited number of superfans who had entered a prize drawing by buying an original NFT token issued by the headline performing artist (for example, Drake). Prizes might include, at the top level, attendance at the live virtual event and an authentic piece of digital merchandise, while runners-up would still get to see the concert on an on-demand basis at a later date, missing the live show.

The network of contractual obligations to navigate and the rights-clearance issues to think about that are illustrated by the example above are not wildly different to the issues that lawyers may be dealing with in the real world. The half-time performance at the NFL Super Bowl is well known in the music industry for being a highly prestigious, but complex, production and clearance exercise. However, in many respects, the level of complexity associated with clearing music for the metaverse can be significantly more complicated. For instance:

Walled gardens. If we accept that the metaverse, particularly looking forward, is made up of one or more dynamic environments in which we can interact and enjoy experiences, the obvious question is, how can each environment be regulated legally? In the early days of the virtual world, Second Life, disputes were common.⁸ In the 2000s, the discussion among lawyers concerned whether “virtual laws” could exist and avatars could find new freedoms to exploit their creations (or adapt and copy other people’s creations). The law has since moved on considerably; it is now more widely accepted that online environments are subject to off-line laws. Any platform or environment of scale will be careful to prescribe the

“As always in music, the primary consideration when music is created, performed, streamed, and exploited online is rights clearances.”

contractual terms on which users are permitted to use the platform or environment. Therefore, the use of music within a metaverse region will be subject to the terms of service applicable to that environment. Anyone seeking to use someone else's music in the metaverse, then, will need to be sure that the terms under which they obtain a license align with the terms of the walled garden in which the music is used. While this sounds easy in principle, a truly global virtual environment is regulated differently, according to the legal jurisdiction. Censorship and content standards affecting a live performance of a Top 10 rap artist will be vastly different in the United States from, say, Indonesia, Dubai, or Hong Kong. Artists often have political views and make statements onstage (who remembers Rage Against the Machine's protest against Guantanamo, for example, or Sinead O'Connor ripping up photographs of the pope?). These types of incidents are more containable in real life, but are the stuff of nightmares for the legal compliance teams at big platforms who often seek to maintain good relations with local governments around the world.

Who clears the rights – I'm a user. It could be argued that consumers may be accustomed to the platforms themselves covering music licensing, at least from a performance or communication to the public standpoint. Online services that have been reported to benefit from blanket licenses with music rights owners and collection societies include Twitch,⁹ Facebook,^{10,11} YouTube,¹² TikTok,¹³ and PlayStation.¹⁴ Notwithstanding that such platforms are clear in their terms of service that music

licensing is the responsibility of the uploader, at least consumers can feel more comfortable about using music in the environment in which they are operating. However, things become more nuanced when music can be created, shared, and enjoyed in a real-time gaming metaverse or social environment. The tools by which any user can instantly now manipulate, edit, and deliver an entirely new musical creation by simply creating a meme are widely available and can be used to devastating viral effect – whoever came up with the dance challenge to Jawsh 685's Laxed (Siren Beat) tribute to his Samoan heritage could not have anticipated that a song created by an unknown New Zealand artist in four hours would soon become one of the world's biggest hits, subject to a sample dispute featuring Jason Derulo, and become a number 1 hit song around the world. At the time of writing, TikTok is unarguably the most important platform for breaking and promoting new music, but now more than ever, it is users who are dictating if and how a song catches fire. For lawyers advising artists, labels, publishers, and even the platforms themselves, the viral capacity of user-created mash-ups and multiple synchronizations creates never-ending potential for innovative licensing solutions, disputes, and lucrative transactions.

Who clears the rights – I'm an artist. Reflecting on legal issues affecting users of music in the metaverse is to say nothing, of course, of the trip wire territory created by the implementation of article 17 of the Copyright (Digital Single Market) Directive when it comes to music in the metaverse. By way of reminder, article 17 was the mechanism by which the music industry sought to make it compulsory for video platforms to obtain site-wide licenses as opposed to relying on safe harbor exceptions. While this goal may now have been achieved – and in fact, arguably the majority of Western video platforms were already licensed or in the process of obtaining licenses when the new laws were finally ratified – the law of unintended consequences may now be taking

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8. <https://www.theguardian.com/technology/2008/nov/25/second-life-internet>.
 9. <https://variety.com/2020/digital/news/twitch-music-licensing-copyright-delete-videos-1234829256/>.
 10. [https://www.prssformusic.com/help/what-rights-are-covered-by-the-facebook-licence /](https://www.prssformusic.com/help/what-rights-are-covered-by-the-facebook-licence/).
 11. <https://www.musicbusinessworldwide.com/facebook-securers-major-label-rights-for-its-twitch-rivalling-gaming-app/>.
 12. <https://www.theverge.com/2012/6/6/3067636/youtube-music-licensing-deal-bmg>.
 13. <https://www.prssformusic.com/press/2020/ice-and-tiktok-agree-to-a-multi-territory-licensing-deal>.
 14. <https://www.prssformusic.com/-/media/files/prs-for-music-membership/newsletters/newsletter-nov-dec-2014/sony-playstation-faqs-festive-enewsletter-2014.ashx>.

effect when considering the scope of what those platform licenses should cover. To recap (and to grossly oversimplify), while the platform will be responsible for making efforts to obtain licenses for content uploaded by users, it will not be held responsible for licensing copyrights in content that is brought to a platform by commercial operators. In the context of music, this immediately begs the question, when is an artist a “professional user”? This topic could easily occupy many more pages of this guide, but thankfully we have covered it in substantially more detail elsewhere.

Who clears the rights – I’m a promoter. Artists as diverse as Ava Max,¹⁵ BTS,¹⁶ Marshmello,¹⁷ and Kaskade¹⁸ have performed through graphic representations in online gaming environments, while cutting-edge virtual reality services like MelodyVR (now rebranded as the next-generation “Napster”) and Facebook’s Oculus permit users to view real-life concerts in a virtual reality format in real time. There is no “one-size-fits-all” approach to clearing rights for these types of events; much will depend on:

- The artist performing
- The basis on which the artist’s recording and ancillary rights are managed
- The songs or compositions that will feature, including whether those recordings were produced under the SAG-AFTRA Sound Code
- Production components that are included (for example, choreography – formerly the preserve of only the most diligent of production rights clearance professionals – can now be a total minefield in the metaverse environment¹⁹)
- The virtual engine powering or underpinning the production
- The creative input from digital artists and other virtual contributors

In more straightforward production environments, those responsible for delivering clearances and “legals” for the online concert can follow tried and trusted video production methodologies, supported inevitably by a music clearance house that can gather together the myriad reproduction licenses needed if the concert will be recorded and exploited. At the other end of the spectrum, however, lawyers are having to develop skill sets that combine (a) the copyright and intellectual property licensing disciplines associated with video game production and game studio development, (b) technology and software licensing expertise, especially where multiple platform or SaaS products are used to power a virtual, avatar-driven performance, (c) rights acquisition and capture for proprietary elements, and (d) old-school live music performance clearances.

Fence hopping. Once the preserve of fantasists, but perhaps now more likely than ever before, it could soon be the case that a user’s avatar can move between environments. Do you want your World of Warcraft character to play in Fortnite? Could Super Mario fight with Sonic the Hedgehog? That may happen. In such a scenario, metaverse environments will need to find new ways of clearing music. Similarly, if a user has a Spotify account, they may like to listen to their music playlists while playing multiple games, perhaps even in a seamless manner. Traditional music distributors – and remember that Spotify is more than 13 years old – may need to play catchup to ensure that their services don’t get swallowed up by the metaverse. Ideas that would have sounded like pure fantasy from a legal perspective 10 years ago are now fast becoming a reality that can burden lawyers for years to come (for example, creating a coffee shop in a virtual world where users can get together and listen to and share their music).

15. <https://www.digitalmusicnews.com/2020/10/06/ava-max-roblox-music-release-party/>.

16. <https://www.epicgames.com/fortnite/en-US/news/light-it-up-like-dynamite-bts-arrives-in-fortnite-party-royale>.

17. <https://www.musicbusinessworldwide.com/marshmello-just-played-a-live-set-to-10m-people-in-video-game-fortnite-and-that-wasnt-even-the-most-interesting-move-he-made-this-weekend/>.

18. <https://www.rollingstone.com/pro/features/kaskade-concert-rocket-league-fortnite-1147137/>.

19. <https://variety.com/2018/gaming/news/fortnite-dance-lawsuit-1203092141>.

Creating new music in the metaverse. Of course, if people are going to exist, project their image, and spend their time in the metaverse, the next logical step for them is to move out of the real-life recording studio and into the virtual creative environment. Already, there are extensive examples of this taking place. VR headsets and controllers that allow users to interact with graphical interfaces that represent musical instruments are widely available. Literally, the air guitar becomes a real guitar – Rock Band VR anyone?²⁰ Forming your own band online, transforming yourself from a balding, middle-aged “Dad bod” into a lavishly coiffured, tanned, lithe rock god living out your fantasies of playing guitar in front of huge crowds is now completely possible. On a more prosaic level, metaverse environments such as Minecraft, Roblox, and Fortnite contain song codes, instruments, recording tools, and music manipulation controls that enable users to be musically creative. While the majority of this activity will result in original copyright that will be of almost zero monetary value, there are infinite possibilities for users to unwittingly infringe or encroach on well-known, commercial songs or properties. Do you want to perform some Whitesnake with your virtual buddies, only to a drum and bass beat and combined with Dizzee Rascal lyrics, while playing your virtual DJ decks and sharing your live set with your new metaverse friends in Bangalore? No problem.

Of course, when the combination of creative technology, people and connectivity move up a gear, and so do the legal issues. Music is already one of the most byzantine, challenging, and disparate areas of entertainment law. The prevalence and expansion of music in the metaverse certainly presents new challenges, but it also creates massive opportunities for legal professionals to innovate and help their clients – not only to navigate through the existing frameworks but also to create new models and ways of exploiting copyrights that help drive incremental revenues and value to the industry, artists, creators, and the platforms that invest in the metaverse itself.



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20. https://www.oculus.com/experiences/rift/744866972281509/?locale=en_GB.

Legal issues

```
EXPORTSYMBOL(groupsalloc);
void groups_free(struct group_info *group_info)
{
    if (groupinfo->blocks[0] != group_info->small_block) {
        int i;
        if (groupinfo->blocks[0] != group_info->small_block) {
            for (i = 0; i < group_info->nblocks; i++)
                for (i = 0; i < group_info->nblocks; i++)
                    freepage((unsigned long)groupinfo->blocks[i]);
        }
        freepage((unsigned long)groupinfo->blocks[i]);
    }
    kfree(groupinfo);
}
kfree(groupinfo);

active = modifier;
option at the end -add back the description
SELECTED_OB);
EXPORTSYMBOL(groupsfree);
select= 1
ob.select=1
EXT.scene.objects.active = modifier
selected" + str(modifier._ob))# modify
exported two objects, the last one
const struct group_info *group_info)
static int groups_touser(gid_t _user *groupList,
{
    const struct group_info *group_info)

    int i;
    unsigned int count = groupinfo->nblocks;
    int i;
    unsigned int count = groupinfo->nblocks;
    for (i = 0; i < group_info->nblocks; i++) {
        unsigned int cpcount = min(NGROUPSPERBLOCK, count);
        for (i = 0; i < group_info->nblocks; i++) {
            unsigned int len = cpcount * sizeof(*groupList);
            unsigned int cpcount = min(NGROUPSPERBLOCK, count);
            unsigned int len = cpcount * sizeof(*groupList);
            if (copyto_user(groupList, group_info->blocks[i], len)
                return -EFAULT;
            if (copyto_user(groupList, group_info->blocks[i], len)
                return -EFAULT;
        }
    }
}
```

Intellectual property

We already understand that the known universe of the Internet has fractured existing models of exploiting intellectual property rights, challenging owners and users of protected content in the areas of authorization, monetization, and enforcement – notably where user-generated content is concerned. At least, however, those debates have as their starting point relatively solid concepts of, for example, copyright works and rights ownership conferring economic and moral rights (even if copyright law continues to struggle with the application of restricted copyright acts to the Internet world – viz the travails of the European courts on the subject of communication to the public).

The metaverse, conversely, will challenge these principles and ask questions such as whether its information landscape and virtual creations qualify for legal protection and ownership at all; where content built on underlying layers of third-party information falls within existing notions of modified or derivative works; and how exceptions to copyright protection such as quotation or private copying may be applied. Just as Philip K. Dick asked us whether androids dream of electric sheep, in the metaverse, we may be asked to consider whether the machine that asks us whether electric sheep dream of androids is an entity capable of parody.

“The metaverse – advertising’s next frontier”

Interoperability. Interoperability is defined as the ability for computer software to communicate with one another for the effective exchange and process of information. The purpose of interoperability is to make it so that different systems are able to “talk” and “understand” the information they pass to one another. Although valuable in any field, interoperability is especially relevant for the metaverse, where no single software will be used to build it.

Today, interoperability is a concept that is limiting the rights of computer program rights holders, which are protected by copyright. In effect, their authorization is not required where copyright-relevant acts pertaining to the code are indispensable to obtain the information necessary to achieve the interoperability of an independently created computer program with other programs, provided that certain conditions are met (legitimate access to the software, necessary acts only, etc.).

In the metaverse, this concept is likely to come increasingly to the fore, and it will be interesting to see how developers adapt to the new demands of making systems interoperable.

Copyrights

Copyrights and their use in the metaverse

Copyright protection in the United States extends to “original works of authorship fixed in any tangible medium of expression.” Many works used in the metaverse are copyrightable, including software, pictorial and graphical works, and sound recordings used within metaverse.

Issues for owners and users of copyrighted works in the metaverse

For copyright owners, the metaverse presents several potential benefits. For example, developers can leverage first-mover presence in a particular aspect of the metaverse to obtain royalties for the use of copyrighted software from late adaptors who are playing catch-up within a particular space.

The Digital Millennium Copyright Act (DMCA) provides an additional layer of protection for copyright owners. The DMCA prohibits the circumvention of measures controlling access to copyrighted works and prohibits the removal and alteration of copyright management information. The DMCA’s remedies for such violations serve as additional protection for metaverse content that is encrypted or otherwise protected against access by potential infringers.

The metaverse also creates risks for copyright owners. For example, policing the metaverse for piracy of copyrighted works can be challenging. Additionally, if the use of the copyrighted work is de minimis, the copyright owner may have difficulty proving infringement. Also, content creators face unique risks. For example, if they are relying on existing licenses in underlying works to create digital content for the metaverse, they must ensure that those existing licenses cover the use of the copyrighted work within the metaverse.

Best practices for owners and users of copyrighted works

Suggested best practices for use of copyrighted works in the metaverse include:

- Reviewing agreements for distribution of third-party content for proper licenses to copyrighted works
- Ensuring that agreements with customers protect against unintended distribution of copyrighted works
- Promptly registering copyrights in metaverse assets and software
- Properly marking copyrighted works
- Implementing technological measures to protect against unauthorized distribution of the works

Trademarks

Trademarks and their use in the metaverse

A trademark is a word, phrase, slogan, design, or logo that operates as an indicator of source for goods or services. Trademark law protects against the unauthorized third-party use of a trademark in a manner that would cause a reasonable consumer to believe that the trademark owner either was the source of the goods/services or endorsed or sponsored such goods/services, or in a manner that may dilute the trademark.

Trademarks are important features in the virtual landscape, and their use is prevalent in the metaverse. As people and companies continue to create and establish their presence online and in the world of virtual and augmented reality, this presents both opportunities and risks. Trademark owners who successfully leverage the metaverse to engage in cross-promotional branding can reach a wider audience, but they must be aware of potential liability associated with that expanded reach.

Issues for owners and users of trademarks in the metaverse

While mixed and augmented reality have allowed brand owners to extend their reach to a growing new industry and consumer base, it has also created issues for both owners and users of trademarks, particularly in the gaming space. For example, a common issue with the intersection of the virtual and real worlds has been the use of real-world, third-party trademarks in video games that simulate the real world.

In the United States at least, trademark owners have not always fared well in their efforts to enforce trademarks used in virtual worlds. An early example of the potential pitfalls of using real-world trademarks in the virtual world played out in *E.S.S. Entertainment 2000, Inc. v. Rock Star Videos, Inc.*, 547 F.3d 1095 (9th Cir. 2008). In E.S.S., the issue was whether a virtual depiction of a real-world strip club in the popular game Grand Theft Auto: San Andreas infringed the real strip club's logo and exterior design trademark rights. The court ultimately held that the depiction of the strip club in the video game did not infringe the strip club owner's trademark and trade dress rights as the video game was an artistic expression protected by the First Amendment, and it was unlikely that consumers would be confused into believing that the strip club produced the sophisticated video game.

With the proliferation of user-generated content in the last few decades, as well as online "virtual world" games such as Pokémon Go, The SIMS, and Second Life, a new set of issues have arisen involving the use of third-party trademarks in virtual worlds. For example, Second Life, a large multiplayer role-playing game that also operates as an online economy, allows users to create their own virtual worlds, develop and promote intellectual property, and even sell their own branded creations (or those of others – more on that below) for a profit. Users can even build an online business presence in Second Life to sell

their products in the real world. However, with these opportunities also come the risks of unauthorized use of third-party trademarks and possible brand dilution. For example, avatars (virtual characters created by real users/players) can sell and purchase virtual goods bearing the trademarks of third parties. Thus, trademark owners should also be aware of the risks presented with the use of brands in these "virtual worlds." While case law surrounding the use of trademarks in the virtual space is unsettled and still developing, some issues that have arisen include the following cases:

- *Minsky v. Linden Research, Inc.*, No. 1:08 cv 819 (N.D.N.Y. 2009): In *Minsky*, the plaintiff opened an art gallery in the virtual world game Second Life and named it "SLART." The plaintiff obtained a U.S. Patent and Trademark Office (USPTO) registration for the mark SLART and subsequently learned that a user-created avatar in Second Life was using SLART GARDEN for its own virtual art gallery. The court never decided the merits of the case, as the case ultimately settled.
- *Leo Pellegrino v. Epic Games, Inc.*, No. 19-1806 (E.D. Pa. 2020): In this case, the plaintiff – a saxophonist who went viral on the Internet for his dance moves – sued the developer of the popular video game Fortnite, alleging that the game featured a virtual saxophone-playing avatar that copied his dance moves. The court dismissed Pellegrino's claim for violation of his right of publicity, based on the First Amendment. The court also dismissed Pellegrino's trademark claim, finding the allegations were better suited for copyright law. The court allowed Pellegrino's claim for false endorsement to proceed, but after the court issued its order, Pellegrino withdrew his case.

- *AM General v. Activision Blizzard*, No. 17-cv-8644 (S.D.N.Y. 2020): In this case, AM General, the company behind the Humvee truck, sued Activision Blizzard, alleging trademark infringement for including the truck in Activision's Call of Duty video game. The court found for Activision Blizzard on summary judgment under the First Amendment, explaining that (1) "Defendants' uses of Humvees in 'Call of Duty' games have artistic relevance," and that (2) "[f]eaturing actual vehicles used by military operations around the world in video games about simulated modern warfare surely evokes a sense of realism and lifelikeness."

If there is a common theme in this area of the law, it is that the risks of liability for a user of a third-party trademark are greater when the unauthorized user is engaging in commercial activity using the trademark.

Best practices for trademark owners

As the metaverse continues to grow and evolve, with the lines between the "real world" and the "virtual world" continuing to blur, brand owners may need to enforce their trademarks in the virtual world. Below are steps that brand owners should consider to protect their valuable trademarks:

- Register the trademark: Brand owners are strongly encouraged to register their trademark with the USPTO and foreign equivalents. In the United States, doing so creates a rebuttable presumption that the owner owns the exclusive right to use its trademark in connection with its goods or services, and puts the owner in a much better position to enforce against any unauthorized use of its mark in either the virtual world or the real world.

- Consider subscribing to a trademark watch service: It is impossible for a trademark owner to monitor and track every infringing use in the market, especially when the owner has a large trademark portfolio. As such, trademark watch services allow the trademark owner to monitor relevant markets and Internet content for possible infringing activity. Consider designating outside counsel to review these reports as they come in. By working with a watch service, owners can be notified of infringing activity sooner rather than later, and can take swift action as these issues arise.
- Immediately notify the platform of infringing activity: Assuming the infringing activity is being conducted by a third-party platform user, brand owners should report this infringement to the platform. Many of these entities do not want to be liable for any contributory infringement, and they will have mechanisms in place to remove the infringing content once they become aware of it.
- Evaluate the nature of use and possible claims: Once aware of possible infringing activity, consider the nature of the infringing use and how the use affects the overall brand and the market for the goods/services associated with the brand. As illustrated in the above case examples, not all trademark use in the metaverse is actionable. Outside counsel can assist with this analysis and can help to determine what obstacles, if any, may exist to the enforcement of the trademark. It is also important to note that nationally known brands in the United States are in a better position to enforce against unauthorized use since under the Federal Trademark Anti-Dilution Act, nationally recognized or "famous" brands can sue if the unauthorized use of their trademark by others "tarnishes" or "blurs" the trademark. The Act applies regardless of whether or not consumers are confused as to the source of the goods.

“It is impossible for a trademark owner to monitor and track every infringing use in the market, especially when the owner has a large trademark portfolio.”

- Establish a metaverse presence: Finally, brand owners should consider establishing a metaverse presence of their own. Aside from the benefits that come with leveraging the metaverse as an alternate means of reaching consumers and building brand awareness via a thriving and growing market, it also provides an opportunity to monitor activity, and it may even help thwart trademark infringement by bad-faith actors.

Patents

Patents and their expanding use in the metaverse

A patent for an invention is the grant of a property right to the inventor, issued by the U.S. Patent and Trademark Office. Generally, the term of a new patent is 20 years from the date on which the application for the patent is filed in the United States or, in special cases, from the date an earlier related application was filed, subject to the payment of maintenance fees. U.S. patent grants are effective only within the United States, U.S. territories, and U.S. possessions. Under certain circumstances, patent term extensions or adjustments may be available.

Companies developing metaverse-related technologies often use patents to protect their inventions. Most metaverse-related patents are in either the VR or AR space. The number of new patents filed related to AR/VR has increased globally at an annual rate of 33 percent since 2010. This exponential rise in the number of filings indicates the increased research and development spending on metaverse-related inventions.

Additionally, research on and development of metaverse-related inventions are no longer restricted to entertainment and science fiction. AR/VR-related patents are now being used in a wide variety of industries, such as online shopping, workplace training, health care delivery, and real estate.

Issues for owners and users of patented inventions in the metaverse

As with other intellectual property, patent use in the metaverse presents opportunities and risks. A particularly lucrative benefit of owning a patent focused on AR/VR technology is potential licensing revenue. However, identifying potential licensees may present a challenge. In fact, owners of patented inventions used in the metaverse face even greater challenges in policing infringement than do owners of copyrights and trademarks. That is because the use of a software patent is not always visible in the metaverse. Indeed, proof of infringement of a software patent such as an AR/VR patent often turns on the analysis of source code, which is not available until the patent owner has filed a lawsuit and obtained the source code during discovery.

The risks to owners of metaverse-focused patents include potential invalidation of the patents during litigation to enforce the patent. U.S. courts increasingly have been invalidating software-focused patents as “abstract” and ineligible for patenting under section 101 of the U.S. Patent Code and a landmark U.S. Supreme Court decision titled *Alice Corp. v. CLS Bank International*, 573 U.S. 208 (2014). In 2020, the patent eligibility of 27 software patents was at issue in appeals before the U.S. Court of Appeals for the Federal Circuit (CAFC), which is the U.S. appellate court dedicated to deciding patent law issues. Out of the 27 patents, the CAFC found only four to be partially or fully eligible under section 101. The law in this area is still developing and is murky at best. This creates uncertainty in the value of patented AR/VR inventions.

Best practices for owners of metaverse-related inventions

Because of the uncertainty surrounding patent eligibility for software inventions in the United States, owners of such inventions might consider not filing a patent at all, and instead protecting the invention as a trade secret. Every invention starts as a secret. At some point, the inventors (or the owners of the invention) have to choose whether to keep their invention as a secret or file for patent protection. Keeping a software invention as a trade secret avoids having to prove that the invention is not merely an “abstract idea” and that it is therefore eligible for patenting. In determining whether to patent a software invention or instead treat it as a trade secret, the owner of the invention should consider:

- Whether the invention will be useful in more than 20 years. If so, it is worth exploring trade secret protection because trade secrets can last longer than the 20-year life of a patent, assuming the trade secret does not become stale due to advances in technology.
- How difficult is it for other companies to reverse engineer the invention. The easier it is to reverse engineer an invention, the less likely it will be considered to be a trade secret.
- How often their employees who have access to the invention change jobs. It becomes more difficult to protect trade secrets in industries with high attrition rates and in jurisdictions that do not view non-compete restrictions favorably.

These choices are strategic and require owners of AR/VR and other metaverse-related inventions to think about the broader picture of intellectual property ownership and its associated benefits and risks.



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“This explosion of new rights will present legal problems for the citizens of the metaverse.”





Artificial intelligence

Artificial intelligence applications are rapidly gaining the ability to behave as intelligent entities and to generate music, art, and other creative works. Three years ago, an AI-created work of art, *Portrait of Edmond de Belamy*, was sold at a Christie's auction for \$432,500. Also notably, the SONY CSL Research Lab has developed an AI system called Flow Machines that composes new music based on everything from the Beatles to Bach.

Whatever the metaverse is – whether an augmentation of the real world, any number of artificial virtual worlds, or both – it is certain that it will be characterized by an overlay of unfathomably vast amounts of information or “data.” A feature of that information is that it will be created and distributed from within the metaverse itself, that is, from within an environment created and imagined by a person and controlled by a particular entity (for example, the developer of a game, and increasingly any other business wanting to be present in the metaverse). But the metaverse, unlike the real world, is entirely manufactured. There will be no digital tree or cloud in the metaverse that doesn’t “belong” to its creator. From the look of our avatars, to the clothes we wear and the cars we drive in the metaverse, we can expect that almost everything will be somebody’s intellectual property.

AI uses machine learning technologies to review, digest, and analyze vast quantities of data to create rules of application called algorithms. Once “educated,” machine learning software can continually improve itself through the analysis of new data sources and through the observation of its own data output. More recently, AI has expanded to include computing systems that aim to replicate the function of the human brain in analyzing and processing information, called artificial neural networks, as well as pairing computer networks in generative adversarial networks where the computers learn from each other.

The massive ingestion of data by AI machines, and the works they create, have generated considerable debate. Can AI digest massive databases that include copyrighted works and use machine learning to “author” creative works without infringing on copyright? In addition, is the output generated by AI protectable under copyright?

Machine learning and fair use

As AI search engines crawl through the worldwide web endlessly seeking, digesting, and aggregating content, they inevitably digest copyrighted works such as music videos, songs, novels, and news stories. Since this digestion is frequently performed without the consent of the copyright holder, its legality depends on whether it is a permitted exception to, or outside the framework of, copyright law. Under U.S. copyright law, the exception that is most frequently relied on is “fair use.”

Under section 107 of the Copyright Act, “fair use” is a four-factor test: (1) the purpose of and character of the use; (2) the nature of the copyrighted work; (3) the amount and substantiality of the portion used in relation to the whole; and (4) the effect of the use on the potential market for, or value of, the copyrighted work. Fair use of a copyrighted work for such things as teaching, scholarship, and research is specifically permitted by section 107. A key consideration that courts have used in deciding whether fair use exists is whether the use is “transformative.”

Whether machine learning of copyrighted material constitutes fair use is a hotly debated topic that will affect the future of AI. For example, Thomson Reuters and West Publishing Corp. recently sued Ross Intelligence, Inc. over, among other things, its alleged use of machine learning to create a legal research platform for Ross from the Westlaw database. Will fair use protect machine learning?

The Second Circuit found Google Books' scanning of more than 20 million books, many of which were subject to copyright, to be a "non-expressive" and transformative fair use of the texts because Google Books enabled users to find information about copyrighted books, as opposed to the expressions contained in the books themselves. If the use of the copyrighted materials is "non-expressive" fair use, protection is likely available. As long as the AI used in machine learning is not "too smart," the mechanical digestion of copyrighted works may be permitted.

Of course, AI has evolved far beyond Google Books. AI now has the ability to learn from the way authors express ideas and to generate its own creative output. This expressive machine learning may in, turn, harm the market for works by human authors. The fact that AI can create outputs that mimic human expression and personalization means that AI's use of copyrighted works for purposes of machine learning may result in copyright infringement if permission has not been obtained from the owners of those works.

Training AI with metaverse content

This "intellectual property everywhere" scenario is likely to affect how we may access and re-use the data created within the metaverse.

AI and machine learning are great examples of technology whose ability to operate – given their reliance on ingesting vast amounts of data – may be hampered in an "intellectual property everywhere" scenario. Today, data and information used to train a machine learning model may or may not be subject to restrictions. Not all information is "protected" or "owned" – for example, protection is unlikely to extend to historical weather information, pollution levels, the shape of clouds, or birdsongs. In the metaverse, every birdsong is likely to be the product of a machine, coded by a human, and may thereby become protectable (for instance, the code used to write the song may be protected, or the song itself if written by a human).

This may give rise to new and fascinating legal disputes. In an "intellectual property everywhere" scenario, the use of almost any type of information in a machine learning system could likely constitute a restricted act for which authorization is required. If we consider copyright, for example, simply "reading" information should not constitute a restricted act, but acts of copying or reproduction – which are likely to take place in the real-world functioning of a machine learning system – almost certainly are unless a relevant copyright exception is shown to apply, such as the doctrine of fair use in the United States, specific machine learning exceptions in jurisdictions such as Japan, or the more limited (and highly compromised, as far as commercial operators are concerned) text/data mining exceptions in European law.

The last point raises another certainty of the metaverse. The application of fragmented and variegated national intellectual property frameworks to "international" machine learning and output distribution will be at least as complicated as they have proven to be in the context of Internet distribution of traditional content. It is certain that the jurisdictional arbitrage that has characterized the development of the Internet will be repeated in the metaverse.

Is AI-created output infringing?

Even if the creation of the AI machine learning model in and of itself is not infringing, if output generated by an AI system that has been trained on a particular type of data is substantially similar, it may be an unauthorized "derivative work" that infringes copyright in the preexisting works. For example, companies like Jukedeck, which was purchased by ByteDance and taken off the market, have used machine learning on recorded music to create algorithms that in turn create new music. Because of the potential for companies like Jukedeck to generate automated music that would hurt the market for music composed by humans (such as production music typically used in film or television), these creative outputs will almost certainly receive heightened scrutiny.

“In the future, making the metaverse a safe place for all is likely to require that every AI-generated three-dimensional gaming environment is devoid of biases, bullying, and other man-made expression of violence.”

Is AI-created content copyrightable?

AI creations are certain to constitute large parts of the landscape of the metaverse’s virtual worlds – sometimes literally, as in the case of the Azure-driven location models and maps generated in Microsoft Flight Simulator. The questions of rights and ownership in the outputs of artificial intelligence systems raise their own problems.

International law espouses the human-centric concepts of personal expression, authorship, and originality as prerequisites for the existence of copyright in a creative work (and therefore for its protection and “ownership”). Those concepts break down when the link between a human author and the creative work is interrupted – most infamously in the “monkey selfie” case, where a photograph taken by a monkey was found not to enjoy copyright protection. Outputs generated purely by artificial intelligence systems (which are, depending on the facts, distinguishable from works created by humans with AI assistance) challenge the norms that only contemplate human creation of copyright works. Even the UK’s unique provision governing “computer generated works,” where the person “by whom the arrangements necessary for the creation of the work are undertaken” is deemed the author, confirms the need to identify a human rather than a system as the author of a “creation.”

Likewise, traditional justifications for copyright protection, such as incentivizing creation of works or protecting the natural rights of creators, break down when the creator is a machine requiring no incentivization and having no personality.

In short, the UK legal system does not appear to welcome or accommodate creations by robots, which (currently) seem destined to fall into the category of information that is free and free-flowing. Could an AI-generated metaverse reset our world by providing a great space for the public domain and “commons” to thrive? Will an AI-generated metaverse compete with human-generated worlds in a great clash of intellectual property battles? The android’s doodle of an electric sheep may have no author and no copyright protection, but the programmer of the android may still want to license it to you.

In the United States, the primary purpose of copyright law is to promote the production of creative works by providing an economic incentive to authors through the protection of their works. This economic incentive is provided to authors for the public good, because enabling authors to be rewarded monetarily for their works will lead to the production of more creative content. As AI companies continue to invest in the technologies necessary for the machine-based production of creative works, will they be able to enjoy the economic protections of copyright?

Section 102 of the Copyright Act requires that for a work to be copyrightable, it must be “an original work of authorship fixed in any tangible medium of expression now known or later developed...” While neither the Copyright Act nor the U.S. Constitution addresses the requirement of human authorship, the courts and the Copyright Office have operated on that basis. The Copyright Office has rejected attempted registrations of works produced solely by mechanical processes, and has included the requirement of human authorship in its Compendium of Copyright Office Practices. Three years ago, the U.S. Court of Appeals for the Ninth Circuit dismissed a claim for copyright infringement based on the publication of selfies taken by a crested macaque monkey in a wildlife book on the basis that an author that was not human had no standing to sue under the Copyright Act.

This means that AI-created works will become part of the public domain when created and can be freely distributed. As it stands, this has profound implications for the development of AI-created works because the companies and investors behind the machines that produce them at present are not afforded protection under U.S. copyright law. There has been a lot of discussion as to whether U.S. copyright will evolve to afford this protection.

“Governments have used versions of the technology in criminal justice and the allocation of public services like income support.”

One argument for extending copyright protection to non-human authors is that other non-natural persons have been extended legal rights. Corporations in the United States have long been afforded the right to enter into contracts and enforce contracts to the same extent as human beings, as well as the obligation to pay taxes.

Some commentators have argued that the end user of an AI program generating creative content should be the owner of that content, using a concept of a machine-based work-for-hire doctrine, with the AI program being deemed the equivalent of a contractor who is hired by an employer to produce content owned by that employer.²¹ Others have cited the creative contributions that the end user makes in directing the AI program to produce a creative work as a justification for the end user being deemed an author of the AI-produced content, viewing the AI program as a tool of the end user.²²

AI as an enforcement mechanism to protect copyright

Beyond having the ability to produce creative works, machine learning also provides human authors with the ability to enforce their rights and to better monetize their rights. Companies like Audible Magic, as well as Google and YouTube, have developed AI software that recognizes content and helps detect potential copyright violations. Their technologies should yield significant economic benefits for human authors.

Should AI copyright be based on creativity?

Some countries, such as the United Kingdom, have moved toward protecting computer-generated works based on the elements of creativity contained in the work in order to encourage investment in AI systems. As AI continues to develop and generate more “creative” works, the debate over the ability to copyright these works, and who can own them, will undoubtedly grow.

Ethics

The other area of considerable interest in the sphere of machine learning and artificial intelligence is that of ethical compliance of AI systems – witness the increasing number of papers and debates happening in that space.

Today, the ethical ramifications and pitfalls of AI are considered to be highly application-specific. The potential for in-built biases of the AI system to create serious consequences for human subjects are deemed very much more obvious in the context of, for example, criminal justice applications than that of an AI generator of artwork. This underlies the identification by the European Commission in its recent draft AI Regulation of “high risk” AI applications, which are to be subject to statutory standards.

In the future, making the metaverse a safe place for all is likely to require that every AI-generated three-dimensional gaming environment is devoid of biases, bullying, and other man-made expression of violence all too often experienced in our real-world environment.

When the day comes, it seems very likely to us that all AI operators – to a greater or lesser extent depending on the nature of their applications, and whether as a matter of legal compliance or commercial best practice (for example, in adhering to voluntary sector standards and benchmarks) – will need to consider their internal processes and governance with respect to the high level of safety and security that will be required to enter the building site of the metaverse.

The scope for bias in systems and outputs; the quality and nature of training data; systems resilience and accuracy; human oversight and intervention – to name but a few factors – are likely to be necessary to ensure that humans feel comfortable, safe, and at ease in the metaverse.

21. See Wenqing Zhao, *AI Art, Machine Authorship, and Copyright Laws*, 12 Am. U. Intell. Prop. Brief 1 (December 2020).

22. See Nina Brown, *Artificial Authors: A Case for Copyright in Computer-Generated Works*, 20 Sci. & Tech. L. Rev. 1 (Fall 2019).

Europe's approach to AI and the metaverse

To date, no specific EU legal framework to regulate AI and the metaverse exists. The development, deployment, and use of AI are subject to a range of horizontal laws and principles, such as on data protection and privacy, consumer protection, product safety, and liability.

Very recently, however, on April 21, 2021, the European Commission published their long-awaited proposal for a regulation on artificial intelligence, aiming to turn Europe into the global hub for trustworthy AI (Proposal for a Regulation laying down harmonised rules on artificial intelligence (Artificial Intelligence Act)). The proposal is the result of several years of preparatory work by the Commission, including the publication of a "White Paper on Artificial Intelligence." The vision of the Commission is to protect and strengthen fundamental rights of people and businesses while at the same time encouraging AI innovation across the EU.

Whom does the proposal apply to?

The newly proposed regulation would apply to (i) providers that place on the market or put into service AI systems, irrespective of whether those providers are established in the European Union or in a third country; (ii) users of AI systems in the EU; and (iii) providers and users of AI systems that are located in a third country where the output produced by the system is used in the EU.

What is in this proposal?

The Commission takes a risk-based but overall cautious approach to AI and recognizes the potential of AI and the many benefits it presents, but at the same time is extremely aware of the threats these new technologies pose to the European values and fundamental rights and principles.

They follow a risk-based approach that is essentially divided into four parts:

1. Unacceptable risk: AI systems that are considered as a clear threat to the safety, livelihoods, and rights of people are generally prohibited. An unacceptable risk exists especially when systems or applications manipulate human behavior to influence the user's free will and that could lead to psychological or physical harm. For example, toys using voice assistance to encourage minors to engage in dangerous behavior would fall in this category.
2. High risk: AI systems identified as high risk are permitted, but subject to special requirements and conformity assessments. Such systems include AI technologies used in various areas that need higher protection, such as education, critical infrastructure, employment management, security components of products, law enforcement in cases of interference with people's fundamental rights, or asylum and border control management.

Just to name a few special obligations: The systems must go through adequate risk assessment and mitigation systems before being placed on the market. In addition, they have to provide a high quality of data sets, a detailed documentation about all information necessary on the system, and its intended purpose so that authorities can assess compliance. The systems must meet the requirements of transparency and information for the user and must be overseen by humans to minimize risks.

In particular, all remote biometric identification systems are placed in this category and are subject to these strict requirements. Their live use in publicly accessible spaces for law enforcement purposes is generally prohibited. Very few strict exceptions are allowed, which must be authorized by a judicial body (for instance, when absolutely necessary to search for a missing child).

3. Limited risk: AI systems with limited risks are generally permitted but also have to fulfill specific transparency obligations. AI systems such as chatbots shall make users aware of the fact that they are interacting with a machine so that they can make an informed decision to either continue or stop.
4. Minimal risk: The vast majority of AI systems, such as video games or spam filters, fall into this category and are legally allowed as there is minimal risk or no risk at all for users' rights or safety.

What's next?

The European Commission's 108-page proposal is an attempt to regulate an emerging technology before it becomes mainstream. As the European Union has been the world's most aggressive watchdog of the technology industry, it may serve as a blueprint for similar measures around the globe.

The rules have far-reaching implications for major technology companies that have poured resources into developing artificial intelligence, but also for scores of other companies that use the software to develop medicine or judge creditworthiness. Governments have used versions of the technology in criminal justice and the allocation of public services like income support. The broad definition of AI systems ensures that the regulation would have a significant impact in all industry sectors, in particular in those sectors that want to have success with the metaverse.

The proposal now goes to the European Parliament and the Member States in the ordinary legislative procedure. Given the controversial nature of AI and the large number of stakeholders and interests involved, it seems likely that this will not be a straightforward process. There will likely be many amendments and, hopefully, also some further clarifications. Once the law is adopted and passed, the regulation would be directly applicable in all Member States in the EU.



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“To date, no specific EU legal framework to regulate AI and the metaverse exists.”



“Regulators around the world would likely consider information collected about a metaverse user’s activities to be personal data, subject to existing privacy and data protection laws.”



Data protection and privacy

Today's privacy and data protection laws were built for physical filing cabinets and then updated for the Internet. Applying them to tomorrow's metaverse, an alternate digital real-time existence offering a persistent, live, synchronous, and interoperable experience, could well prove to be a stretch too far.

The following sections describe some of the ways in which current privacy and data protection laws could potentially be applied to, or end up becoming obsolete in, the metaverse.

Determining who is responsible and which laws apply to the metaverse will be challenging

The metaverse will connect the person to their "avatar" (or other digital representation(s)). Therefore, regulators around the world would likely consider information collected about a metaverse user's activities to be personal data, subject to existing privacy and data protection laws.

As those who have practiced privacy and data protection law know, the cross-section of applicable laws, especially in the United States, is a constant challenge. Regulation of a digital interaction may involve the engagement of privacy rules in some countries based on physical location of the organization or the individual; the type of organization or individual (say, a health care organization or a child); the type of data collected (say, race or sexual orientation); and the purpose for collecting the data (for example, marketing or profiling). Applying this cross-section of laws is unwieldy even in a relatively static environment like the Internet. It is unclear how organizations could navigate legal compliance in a persistent, live, synchronous, interoperable digital environment. Organizations operating within the "one-stop-shop" privacy rules of the EU General Data Protection Regulation (GDPR) may fare better here, but this raises another issue – which privacy rules of which

country apply in the metaverse? Does it still make sense to have privacy laws such as the California Consumer Privacy Act (CCPA), which focuses on Californian residents, and won't the metaverse make it even harder for organizations outside of the UK and Europe to know when they are targeting products or services to or monitoring those in the UK and Europe and therefore caught by the GDPR?

Further, who will be held responsible for privacy in the metaverse? We don't know what (if anything) will own or control some or all of it. Possibly, it will operate with single-organization ecosystems (similar to today's social media platforms), centrally operated platforms hosting different organizations offering their goods and services, but alternatively, it will be characterized by interacting access points and multiple controllers. If governments hold organizations responsible for others' activities in the metaverse, it is difficult to envision organizations building anything but a collection of proverbial "walled gardens" that will not fulfill the promise of the metaverse.

Operationalizing transparency and control in the metaverse could stretch notice and consent models to their limit

Most privacy laws around the world have as a central component the principle that individuals should know how their personal data is being used, by whom, and for what purposes. The last few years have seen an acceleration in such requirements with an ever-growing list of details that organizations need to tell their customers. With complex technical use cases for data on the rise, this can lead to a situation in which individuals are confronted with pages and pages of privacy notices seeking to explain how their data is used and thereby put off even attempting to read them in the first place. Imagine trying to write a privacy notice for the metaverse – let alone then keeping it up-to-date!

Then imagine that one's journey through the metaverse isn't just an engagement with one organization and controller but more akin to a trip to a mall with the possibility to seamlessly move from one store to another with advertising and offers from others along the way. How to operationalize privacy laws obsessed with transparency, tracking, and controls in such a world? With cookie pop-up mechanisms already the bane of many an Internet surfer's life, will users be confronted with pop-ups and clickwraps before their eyes at every turn? At what point does visibility, consent, and choice over data use become unworkable and no longer in the interests of those it serves to protect?

The data sharing required for the metaverse to operate will be immense and unprecedented

The sheer number of companies (not to mention legal entities) involved in making the metaverse tick could be on a scale never seen before. The intended experience for the user will require rich personalization, dependent wholly on their profile, preferences, and actions.

Much like the AdTech ecosystem we see today, personalization of experience is often very personal-data-heavy and involves the collection, combination, and transfer of huge data sets from a number of different sources. This can include both off-line and online personal data, such as the user's grocery shopping preferences, all the way up to their inferred age, gender, and even health status, often gathered based on Internet browsing history. This provides organizations with the most accurate representation of their users. In a world where personalization is everything, this will be crucial for the metaverse and arguably even more intense than what we see online today since it will allow almost every part of an individual's life to be personalized, targeted, or advertised to in some way.

Such mass personal data use brings various privacy challenges. A key problem is how to manage the sharing of such personal data and set up the contractual accountability and privacy obligations required to protect its use. Again, a useful analogy here is AdTech, which relies on a network of contracts – many standard form, some bespoke. How will such a nexus of contracts – which would have to account for the sharing of personal data to and from hundreds (if not thousands) of entities – be negotiated and signed, and take account of any and all applicable governing laws?

A further layered challenge sits in the fact that additional contractual requirements apply in many countries where personal data is transferred out of certain jurisdictions. Transfers out of the EU have been a particular focus area in the last year and now require careful assessment on a per transfer, per country basis. There are also a number of jurisdictions with data localization requirements. How will the metaverse take into account (or not) such requirements, given its all-encompassing, global reach? Will regulators be able to provide templates and guidance to allow the right balance between efficiency, pragmatism, and protection of privacy rights for individuals?

Determining which individual rights apply, who is responsible for complying, and how to operationalize them will be a difficult undertaking

Many privacy laws around the world give individuals rights with regard to their personal data, and individuals are increasingly aware of those rights. Particularly in Europe, individuals are active in exercising their “right to be forgotten” and the “right to access” their personal data, and many organizations in the last few years will have dealt with requests from consumers or employees (or ex-employees) to “delete all of the data immediately!” or “provide all of the data that the company holds on me.” As those who deal with such requests will know, it’s not that simple in practice, and there are a number of exemptions and exceptions, which means that individual rights will not always need to be complied with. However, all requests need to be carefully considered on a case-by-case basis, and companies need to take time to consider how to inform individuals about their rights and to comply with requests within the required period of time.

Applying this in the metaverse, the first issue to consider will be which rights apply to which individuals? As explained above, this will differ depending on which privacy rules apply. Then, operationally, how will the functionality to exercise these rights be built into the metaverse? And finally, who will be responsible for complying? Under the GDPR, it is the controller’s responsibility to ensure that individuals can exercise their rights and comply with them – again, in a world where there may be many controllers, it may not be immediately apparent who is responsible for this and how the exercise of rights in one area may have implications or limits elsewhere.

AdTech and the metaverse

AdTech already exists in the gaming industry where providers give advertisers opportunities to place advertisements in-game, such as on billboards or jerseys, and the AdTech ecosystem will find a way to support advertising opportunities in the metaverse. Besides the obvious data and privacy issues we addressed earlier, typical issues that advertisers consider when contracting with an AdTech provider are obligations around compliance with laws, representations and warranties, indemnities, insurance, and ownership and licensing of data. However, there are other issues and concepts that are relevant in today’s advertising landscape that will likely also be relevant to advertising opportunities in the metaverse, such as:

- Measurement and cross-platform tracking of ads is already an issue in the advertising industry, especially in light of the imminent demise of the use of cookies across many search engines and platforms and the ever-changing landscape of privacy laws. Advertisers should ask: how does measurement and tracking of ad performance in the metaverse work? How are standards set? Who is responsible for measuring ad performance?
- Ad fraud is any activity that fraudulently represents online advertisement impressions, clicks, conversions, or data events in order to generate revenue. There is no doubt that fraud will be present in the metaverse as well. Advertisers should ask: How can we prevent, track and measure fraud in the metaverse? How can we understand whether it is different to the online fraud the industry already grapples with?
- Viewability is the advertising metric that aims to track only impressions that can actually be seen by users. This metric will likely be relevant to at least some advertising opportunities in the metaverse. As such, advertisers should ask: How will we know if the ad is viewable? Are viewability standards different in the metaverse – or should they be?

- Brand safety is a set of measures taken to protect the image and reputation of a brand from the negative or damaging influence of questionable or inappropriate content when advertising online. Advertisers should consider brand safety issues when engaging in the metaverse and ask: how can AdTech providers help to ensure that advertisements are placed in brand-safe environments?

These are just some of the many considerations that arise when trying to apply existing data protection laws in the metaverse. It will be fascinating to see what changes will need to be made in practice either to the metaverse to suit existing privacy laws, or to existing privacy laws to suit the metaverse.



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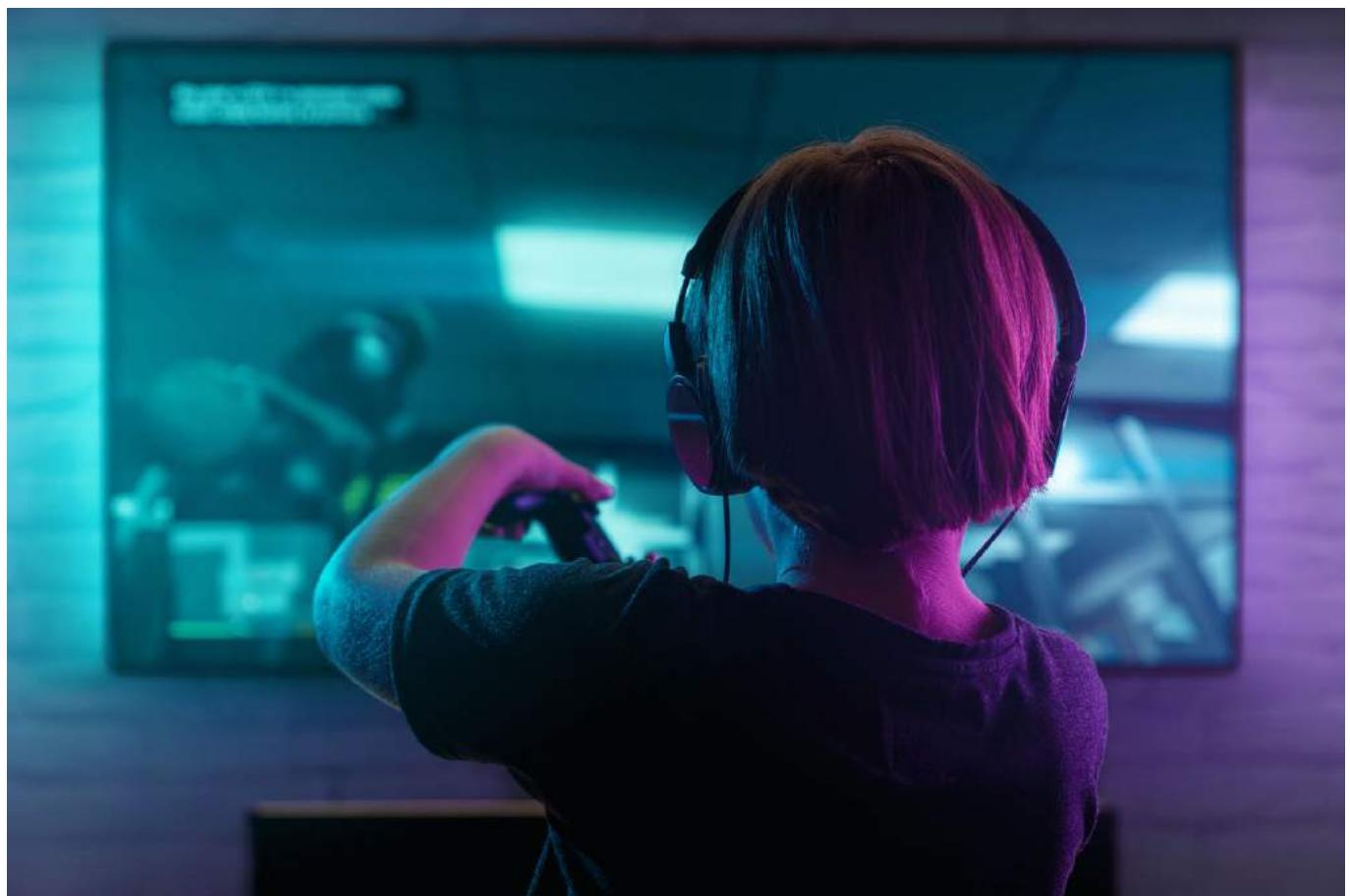
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“It will be fascinating to see what changes will need to be made in practice either to the metaverse to suit existing privacy laws, or to existing privacy laws to suit the metaverse.”



Content licensing

The metaverse will provide new opportunities for content creation, consumption, and exploitation. However, the successful monetization of such content presents new challenges for stakeholders. In short, rights holders who are creating and licensing content will want robust protection to ensure that they are fairly remunerated for each new use case. In contrast, licensees who are using and exploiting content will want licenses sufficiently broad to adapt to the evolving use cases. End users' interests will be primarily focused on the user experience, but their interests may also overlap with rights holders and licensees, subject to whether they are participating in content creation or consumption of content. Regardless, it is almost certain that the metaverse will drastically change the way we think about content licensing.

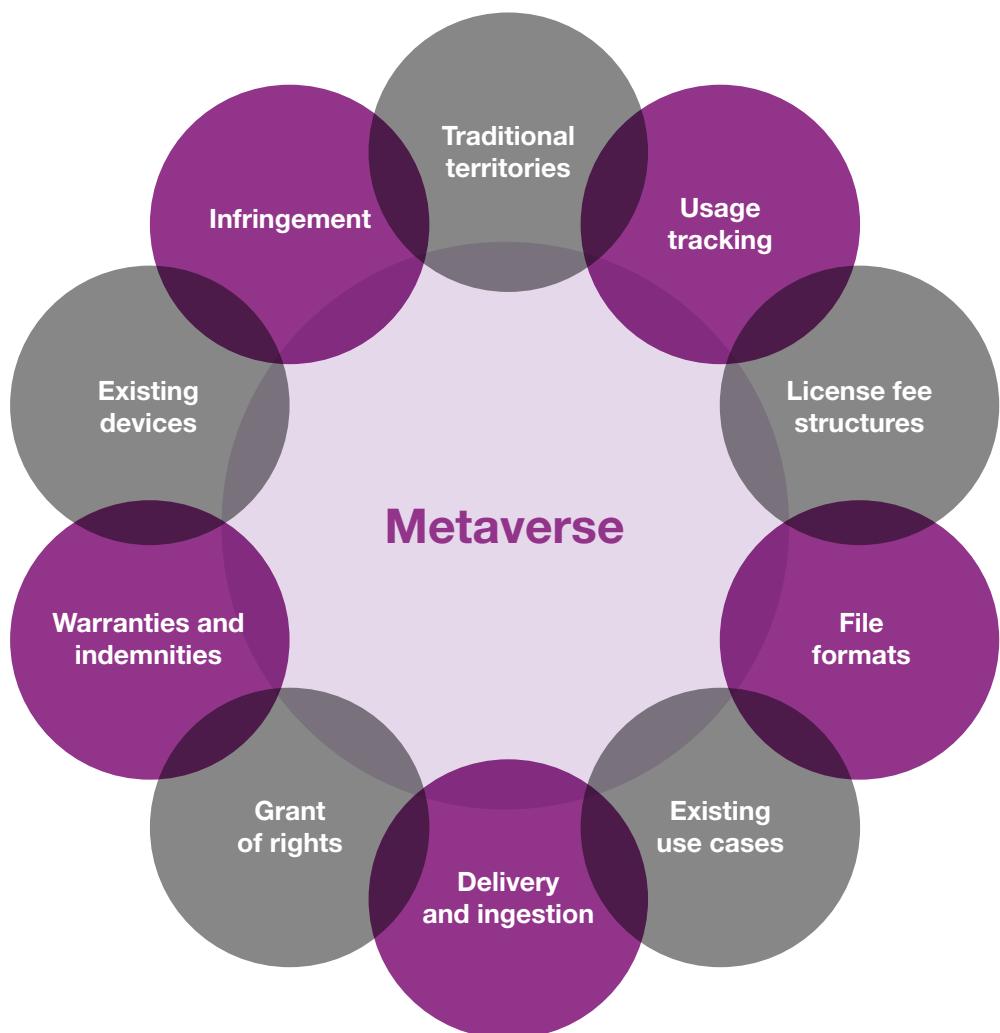


Key challenges

While the terms of any license will vary depending on the content and use case, among other factors, there are several terms that are commonly found in content licenses that will need to be carefully considered when licensing content for use in the metaverse, as further set out below.

Term	Current position	Implications for licensing parties
Territory	Licenses are typically granted on territorial basis, with the licensed territory being defined on a national, regional, or worldwide basis. Some agreements specify “the universe” as the applicable territory.	Is the metaverse included in existing territorial definitions? When air travel became popular, the rights to license in-air entertainment were carved out so that it could be licensed separately. This may also be the case with the metaverse.
Rights granted	The owner of a piece of content has certain exclusive rights in that content by way of copyright and other intellectual property rights laws. A licensor will grant certain rights to use their content, depending on the licensee's intended use case.	While the basic copyright principles, as further set out in the intellectual property section will likely translate into the metaverse, the use cases are likely to be incredibly broad and constantly evolving. From a licensee's perspective, a grant of rights will need to be broad enough to adapt to the constantly changing environment without the need to repeatedly amend and renegotiate the underlying license. Licensors should also review any exclusive grants of rights they have made to determine whether there is scope to argue that the metaverse falls outside the exclusivity conditions. To the extent the content contains any underlying third-party rights, whether intellectual property or publicity rights, the licensor will need to ensure that it has the ability to pass those rights on to the licensee. In addition, to the extent a piece of content (e.g., a clip from a music video, television show, movie, video game, or commercial) was produced under one of the many SAG-AFTRA collective bargaining agreements, the creator of such content must ensure the licensee's compliance with any payments due to the performers as a result of the licensee's use of the content.
Licensed services, devices, and uses	Licenses are often limited to a particular service, device, or use (or a combination thereof). For example, a licensor may grant a license that allows end users to stream music through a branded service on named devices.	The interactivity of the metaverse may make it more challenging for licensors and licensees to agree to limit the license to specific use cases. Licensees will likely demand greater flexibility to facilitate development and interaction with the metaverse, while licensors will want to rein in the grant of rights as tightly as possible and consider whether they can maximize the number of licenses that can be granted in connection with the same content.
Fees	A license fee may be based on a flat fee, per subscriber, per viewer hour, minimum guarantees, advances, proportion of revenue, or other usage models (or a combination thereof) in exchange for the grant of rights from the rights holder.	While the basic fee mechanisms may remain the same, the metaverse will complicate (1) the definitions of revenue and usage metrics; (2) how usage can be tracked across different services, devices, and use cases; and (3) how the fee is calculated. Fees may also be impacted by the collective bargaining obligations referred to above.

The above is by no means an exhaustive list of the challenges the metaverse will bring to content licensing, but it represents some of the key commercial and legal issues that will need to be considered by licensees and licensors alike. Flowing from these overarching considerations are other challenges that will also need to be assessed, such as usage tracking, file format standardization, delivery and ingestion of content, scope of warranties and indemnities, and conduct of claims for infringing use, among others.



“This may force conservative licensors to provide greater flexibility with regard to bundling and association limitations, but equally making it ever more important for licensors to ensure that their reputations and brands are adequately protected.”

Different perspectives

Inevitably, licensors and licensees will have different perspectives on these key challenges. Licensors will likely seek to maintain a restrictive approach to licensing in the metaverse, for example, by limiting the grant of rights and clearly defining the licensed services, devices, and uses, unless there is a substantial financial incentive otherwise. The underlying considerations will remain the same – licensors want to control how their content (and ultimately their brand) is used and consumed. Licensees typically want as broad a license as possible, as this allows them to be more creative with content exploitation and to take advantage of market developments and trends. This will be even more important in the metaverse. Service providers with existing licenses will need to determine whether such licenses are sufficient. The reach, immediacy, and interactivity of the metaverse will demand the broadest set of rights possible. Licensors and licensees will need to consider the overarching user experience when negotiating the scope of the grant of rights. The licenses that facilitate content exchange in the metaverse will need to be flexible enough to ensure a seamless user experience between increasingly overlapping and interconnected services. This may force conservative licensors to provide greater flexibility with regard to bundling and association limitations, but equally making it ever more important for licensors to ensure that their reputations and brands are adequately protected (as further set out in the reputation and deepfakes section).

Key industries

While there are some key challenges that will apply across a variety of different sectors (as further set out in the advertising, games and music sections), different industries will face their own particular issues in terms of content licensing in the metaverse.

- **Advertising** – The right to include a song or other item of content in any form of advertising is often strictly controlled. Even if such rights are granted, they are often subject to numerous restrictions and approvals, such as payment obligations to performers, singers, and musicians under the various SAG-AFTRA and American Federation of Musicians (AFofM) collective bargaining agreements. While the licensee may not be a signatory, the licensor will typically include a specific provision that requires the licensee to nonetheless comply with such collective bargaining agreements. In addition, rights holders want to ensure that their content is not being used to promote a product they do not support, or in a way that does not fit with the creator’s image. This will be even harder to manage in the metaverse because there will be numerous scenarios in which a particular ad is viewed, depending on how the viewer interacts with the metaverse. In the United States, individuals appearing in the content being licensed (including deceased individuals) may have rights of publicity that require permission for the use of the individual’s likeness (including digital ones) in advertising. The metaverse will likely become a source of ad inventory (for example, virtual billboards, point of sale at virtual stores, event sponsorships, etc.), raising questions as to how best to track and measure the effectiveness of and engagement with virtual ads.

- **Games** – Gaming and e-sport companies will most easily be able to adapt their existing services and operations to function seamlessly in the metaverse. Because of this head start, “players” in this industry should, on the one hand, carefully consider how to protect their content and assets while also exploring how they can license out their rights to other less metaverse-ready industries. On the other hand, the traditional use of buyout models in the content creation process means they are not constrained by a limited grant of rights.
- **Music** – Usage tracking poses a particular challenge for music licensing in the metaverse, particularly when you layer in the SAG-AFTRA and AFoM payment requirements for songs recorded under their collective bargaining agreements (which includes most songs from major labels). With different services, devices, and use cases, the likelihood of receiving duplicate or triplicate claims for a single use are even greater. Already complex and expensive usage tracking and reporting systems will need to be adapted to deal with the interactivity inherent within the metaverse. Existing collective management licensing structures will also need to be examined, particularly considering what rights such entities will hold in the metaverse and whether they will continue to license on a territorial basis.
- **Social media** –The terms and conditions for the use of social media services set out intellectual property ownership provisions, but the increased interactivity across services and devices in the metaverse will likely blur the lines between where one service begins and another ends and, therefore, which terms will be controlling and also who owns the IP created. Similarly, if a user creates a piece of content in one corner of the metaverse, questions will arise as to how it will be licensed in another area and who will be liable for any infringing use. Increasingly, end users may demand compensation for any such exploitation – meaning that service providers will need to consider how revenues can be shared across different services and devices.
- **Film and television** – We are already starting to see increased interactivity in how we view film and TV – take, for example, interactive TV and films on Netflix, such as Bandersnatch and You vs. Wild. There is more opportunity for increased interactivity between content creators and viewers in the metaverse, both with and between viewers and also with their surroundings. This may also raise ownership issues: to what extent does the viewer transition to a creator who holds certain rights in the content, and what does that mean for continued exploitation of the content? Also, what does it mean if the interactivity leads to infringement of another party’s rights? And who is liable: the producer or the interactive viewer?

What you can do to prepare

As the metaverse evolves, we will see an influx of the development of new services and devices to facilitate user engagements. New entrants will need to prepare bespoke agreements for how content is licensed. At the same time, existing service and device providers will transition their services to fit the metaverse, and they may wish to review existing content licenses to determine whether they are sufficient. For the reasons set out above, this will not be an entirely straightforward exercise as there are new challenges to consider in the metaverse. Existing stakeholders will need to either enter new licenses or amend existing ones to build in the flexibility necessary to operate successfully in the metaverse.



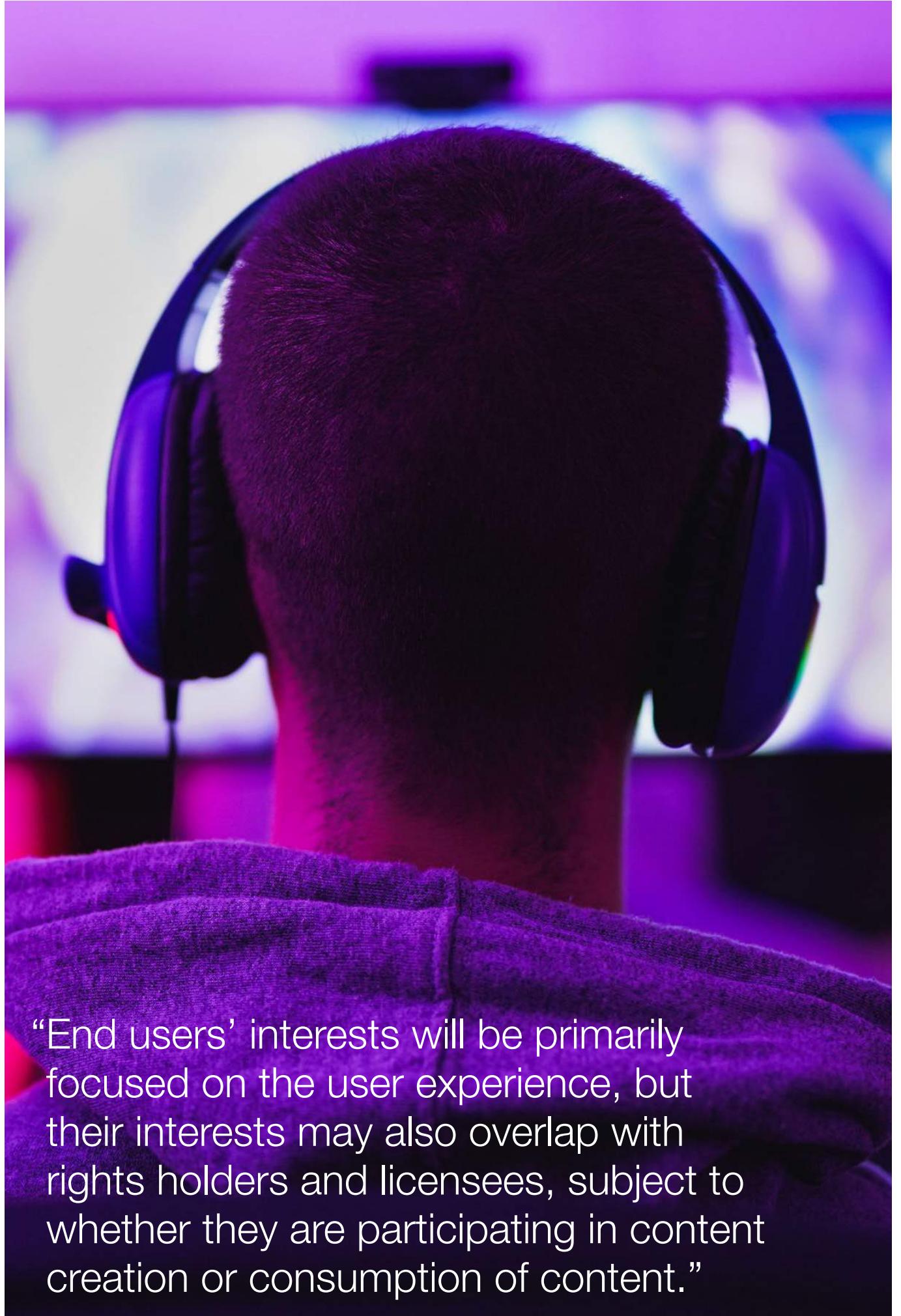
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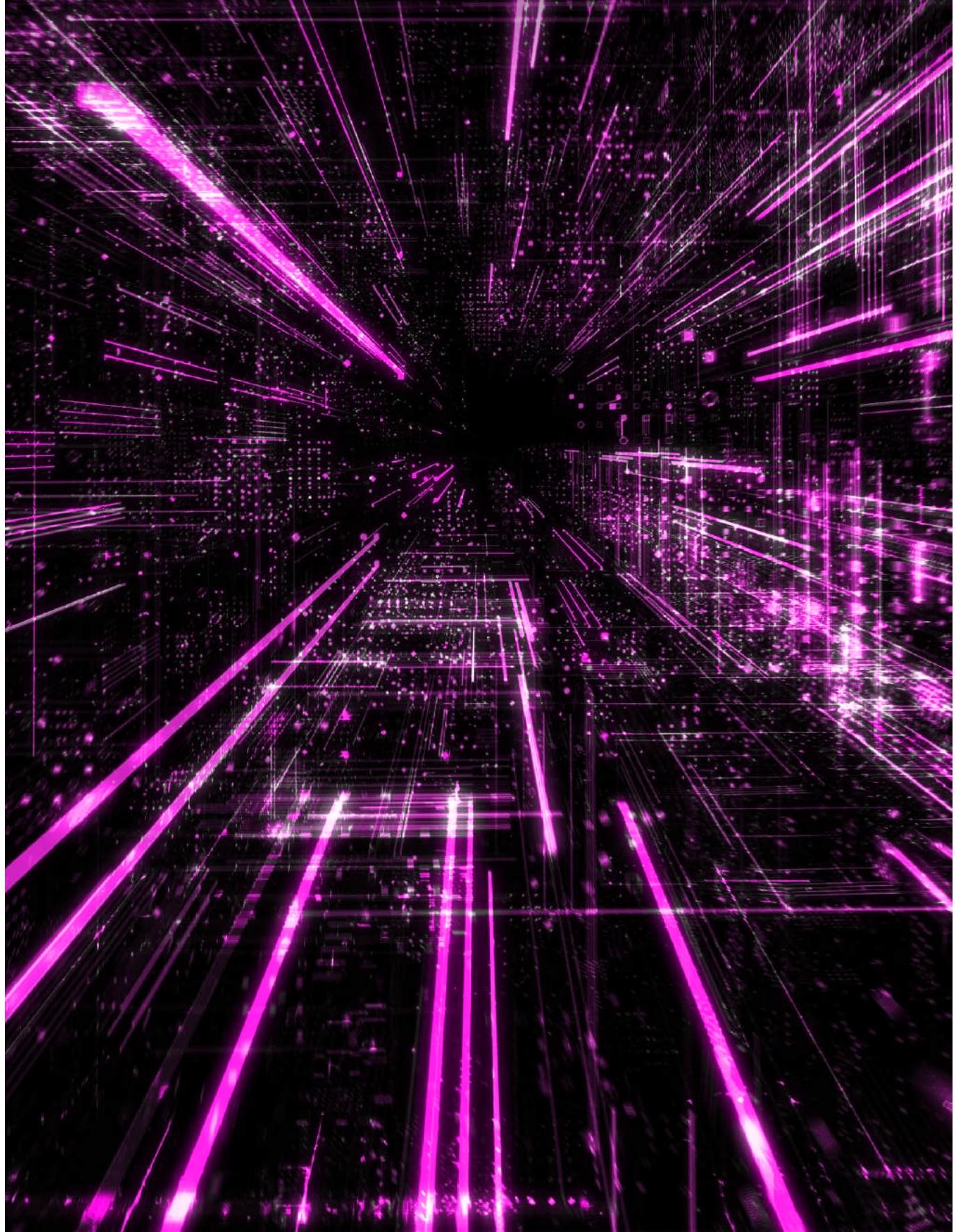
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“End users’ interests will be primarily focused on the user experience, but their interests may also overlap with rights holders and licensees, subject to whether they are participating in content creation or consumption of content.”

“Possessing runs the world, and the metaverse will have a hard time changing that. But here come the NFTs.”



Ownership in the metaverse – the great illusion of NFTs

By removing the physicality of the real world, the metaverse is posed to shift our human society away from several long-held legal concepts, including the concept of ownership. Because “owning” has a completely different meaning in the virtual world than it has in the real world, what one owns or may own in the metaverse will likely be a question that is only relevant to a happy few and will also likely be the subject of films, books, heated societal debate, and of many more lawsuits before the notion settles. Could NFTs offer a solution?

This tension results from a very simple stance. The Internet is made of code and content, yet there are no ownership rights in code and content but for those who wrote the code and created the content. Do you think you own your software, a piece of music, an audio book, a game character, a game asset, a virtual car? Think again. At best, you received a license to use the items; at worst, you may be infringing upon someone else's rights.

Yet, paradoxically, one has never bought and sold more than on the Internet; and in a society where capitalism is alive and well, study after study shows that owning continues to be far more valued than licensing. This “endowment effect” explains why marketers and advertisers are so reluctant to use expressions such as “limited license” or “permission to use.” Possessing runs the world, and the metaverse will have a hard time changing that. But here come the NFTs.

What is the endowment effect?

In psychology and behavioral economics, the endowment effect is the finding that people are more likely to retain and value an object they own rather than acquire that same object when they do not own it. This is typically illustrated in two ways. In a valuation paradigm, people's maximum willingness to pay to acquire an object is typically lower than the least amount they are willing to accept to give up that same object when they own it – even when there is no cause for attachment, or even if the item was only obtained minutes ago.

Used in experiments in psychology, marketing, and organizational behavior, the endowment effect also materializes when people who are randomly assigned to receive a good (“owners”) evaluate it more positively than people who are randomly assigned to receive rights to do certain things with the good (“controls”), and that is the gigantic paradox that the metaverse will need to confront. While they are posed to solve the ownership problem of the virtual world, without some drastic intervention from legislators, NFTs may turn into nothing more than a collective illusion of ownership.

What is an NFT?

In short, an NFT, or “non-fungible token,” is a unit of information recorded on a blockchain about a good or service that is not interchangeable.

Blockchain? A blockchain records information in a distributed database that seals the information with a collaborative cryptographic procedure. The information comprises transaction data and a time stamp and is organized in linked “blocks” as it is recorded. One transaction is recorded in a block, and the subsequent related transaction is recorded in another block that is linked to the first one, using cryptography. By design, a blockchain is resistant to modification because altering one block retroactively cannot be done without altering all other linked blocks. This feature and its functioning in a decentralized peer-to-peer network give it its reliability. Arguably unfalsifiable and incorruptible, blockchain technology is new, enigmatic, and terribly appealing as a concept.

“A key feature of NFTs is that they are (or ought to be) liquid and thus easily tradable.”

Fungible? Blockchain is the technology that enables the existence of cryptocurrencies, such as Bitcoin.

Cryptocurrency works like any other currency in the sense that its units are fungible and can be traded or exchanged equally. One Bitcoin has the same value as another Bitcoin, just as one dollar bill has the same value as another dollar bill. An NFT, much like a cryptocurrency, uses blockchain to record the transactions related to it. But unlike cryptocurrencies, NFTs are non-fungible. NFTs represent a particular good or a particular service, and they uniquely relate to what they represent. That means they are not equally exchangeable and are, in theory, unique.

What is the point of NFTs? Blockchain technology can be used to deliver a variety of services. For example, the Ethereum blockchain has been used from a very early stage to authenticate rare or valuable objects including diamonds or tangible work of arts. What NFTs bring into the picture is the “tokenization” of the asset that the information relates to, to make that asset “tradable.” A transaction layer is added to the information layer, with the aim of creating a market for the underlying asset. In essence, NFTs are tools for turning previously non-liquid assets into “quasi-liquid” assets.

Early use of NFTs: the example of the “art” NFTs

While the scope of application for NFTs is significant and it is fair to assume that NFTs will, one way or another, play a much greater role in our lives than they do now, the hype and publicity surrounding NFTs has largely been focused on the use of NFTs to trade artworks. Other assets have started to be tokenized and traded as NFTs (such as music, video games skins, etc.), but the wave of enthusiasm triggered by the sale of a Beeple NFT by Christie’s for \$69 million in March 2021 means that a vast amount of NFTs currently being minted and sold through marketplaces are artworks.

In its blog post about the sale, Christie’s mentions that it “is the first major auction house to offer a purely digital work with a unique NFT (Non-fungible token) – effectively a guarantee of its authenticity – and to accept cryptocurrency, in this case Ether, in addition to standard forms of payment for the singular lot.”

But what exactly did Christie’s sell here? Did the acquirer – a crypto investor who goes by the name of “Metakovan” – really pay \$69 million for a certificate of authenticity?

“Owning” art. Ownership is a legal concept as old as human civilization. It is surprisingly simple and complex at the same time and a concept that has had to adapt quite dramatically to the advent of the digital era. As discussed in an earlier blog post, in law, property is “the right to enjoy and dispose of things in the most absolute manner.” This is clear when it comes to, for instance, your house. You bought it; it is your property in absolute.

By contrast, intellectual property is a far younger concept. Intellectual property is a branch of law that comprises the rules applicable to “intellectual” or “immortal” creations, which are elevated to the rank of “intangible property” by the law. For instance, the law designates patentable inventions, trademarks, and creative content as intangible assets that may be appropriated and “owned.” By contrast, the law does not designate mere data or mere information as being protectable by intellectual property rules and therefore capable of being “owned” – and for good reasons. In democratic societies, information and data, just like ideas, are free-flowing. Data, in itself, is not something that can be appropriated or “owned.” It is not possible to own the information that Joe Biden was elected president of the United States in the 2020 elections, just as you cannot own the idea of painting flowers.

So now, if you apply this logic to the world of art, you end up with the following situation. Two kinds of property exist in physical artworks: the tangible property and the intellectual property. Whereas only one kind of property exists in digital artworks: the intellectual property. What this means is that unlike a physical work, a digital artwork cannot be owned by two persons or entities at the same time. Only one property exists, and that is the intellectual property of the creator.

Many commentators have tried to draw an analogy between purchasing a digital art NFT to buying the physical original of a painting; the analogy they would draw, for instance, is that buying an NFT of digital art is akin to purchasing the Mona Lisa. But, this analogy does not hold water. When a person buys a painting from a gallery, what they buy is the “tangible property,” that is, the canvas and the paint – not the intellectual property. NFTs do not replace canvas and paint because NFTs are nothing more than information, and information cannot be owned.

While there are respected legal commentators who have suggested that some common law systems (English law in particular) may well have sufficient flexibility to expand the application of property law to certain types of purely informational crypto-assets, reconciling this notion with the freedoms of expression and information enshrined in international conventions²³ seems a particularly difficult task. Without legislative intervention, the absence or existence of property rights in information will continue to provoke difficult questions for crypto stakeholders.

What our research shows is that most NFTs being minted today are far more akin to providing a service (the authentication of a work of art) or granting a license (a limited permission to use and enjoy the digital art), but very rare are the occurrences where true ownership is being passed to the acquirer. The key takeaway from this is that purchasers of NFTs should understand what they are “buying.” Equally important is for those tokenizing artwork to be careful in how they market and advertise their NFTs. Advertising the “sale” of artwork could be potentially misleading if all the NFT creator is offering is a digital certificate. As we learn from behavioral economics and the endowment effect, the temptation might be strong to advertise NFTs like nothing less than a “sale,” but the consequences of doing so might be fraught with serious legal issues.

The (smart) contract issue

A key feature of NFTs is that they are (or ought to be) liquid and thus easily tradable. This is what gives them their apparent value and why we are seeing digital assets being sold and bought for millions. But where the NFT is nothing more than a license, how liquid can a license really be? A typical license agreement invariably offers some form of warranty or indemnity from the licensor to the licensee, against anything disturbing the quiet enjoyment of the rights granted, but if the NFT changes hands 20 times, who will stand behind the content?

Another challenge of using NFTs to “sell” certain limited licenses or usage rights over digital artwork is knowing how to effectively “attach” the contract/terms and conditions to the NFT such that the purchaser (and future purchasers) of the NFT is bound by them. The related issue is how can a seller or marketplace easily enforce the terms of those contracts against the applicable purchaser. Sellers and marketplaces have to walk a fine line between ensuring they impose appropriate terms on purchasers of NFTs and ensuring those NFTs can be traded easily with little formality. The more sophisticated the usage rights are, the more critical it will be to ensure that the seller imposes robust contractual restrictions and remedies on purchasers. Sellers will need to bear this in mind when choosing which marketplace through which to sell NFTs.

23. Including art. 10 of the European Convention on Human Rights which states: “Everyone has the right to freedom of expression. This right shall include freedom to hold opinions and to receive and impart information and ideas without interference by public authority and regardless of frontiers.”

Regulation, regulation

There is no specific regulation yet regarding NFTs, but the carefree attitude of early adopters should not serve to elude the reality: NFTs are regulated exactly like any other type of asset you can buy online. As transaction volume grows, we suspect there will be greater scrutiny applied by regulators, authorities, and watchdogs. While the issues will be as numerous as there are NFTs, two compliance issues deserve a special mention.

- a. **Securities regulation.** As described above, NFTs have been designed to carry a number of similar characteristics to a financial asset. Although they are not fungible, NFTs have been encouraging, and used as a tool for, speculation. Consequently, it is possible that they may come to be regulated within financial regulation, but the question is still open. One of the primary factors that will determine whether an NFT is a security is the purpose for which it is being created and sold. If the NFT is being created and sold as a way for members of the public to earn investment returns, then that type of NFT is more likely to be considered a security. Those considering minting an NFT should take advice before doing so to avoid unintentionally breaching financial regulatory law. Even the way in which the NFT is described and marketed can influence the extent to which it may be considered falling within the scope of securities law, and we foresee some marketplaces and sellers coming unstuck if they do not consider this seriously.
- b. **Consumer law.** NFTs are offered to the public; they are not restricted to professional buyers only. Accordingly, marketplaces and sellers are subject to local consumer law, which requires them to operate with a high level of transparency and brings them within the scope of consumer protection laws on unfair commercial practices, including the right for consumers to withdraw and to receive appropriate information about the NFT in their local language, subject the NFT sale to their local law, etc.

- c. **Tax law.** The nature of the transaction will determine its tax status (is it a sale or a license, a national or an international transaction, B2C or B2B, etc.). The tax treatment will also be different for marketplaces, sellers, and purchasers. With the high fluctuation in prices, it will be critical to obtain proper tax advice to understand your exposure to VAT and other taxes.

In conclusion, NFTs may be fun experiences, giving people special access to something they personally value (like an unreleased track by your favorite band, or a digitally signed artwork), but those looking to make a solid investment should understand the risks and limitations attached to NFTs and not let the sirens of digital ownership replace a robust due diligence exercise.



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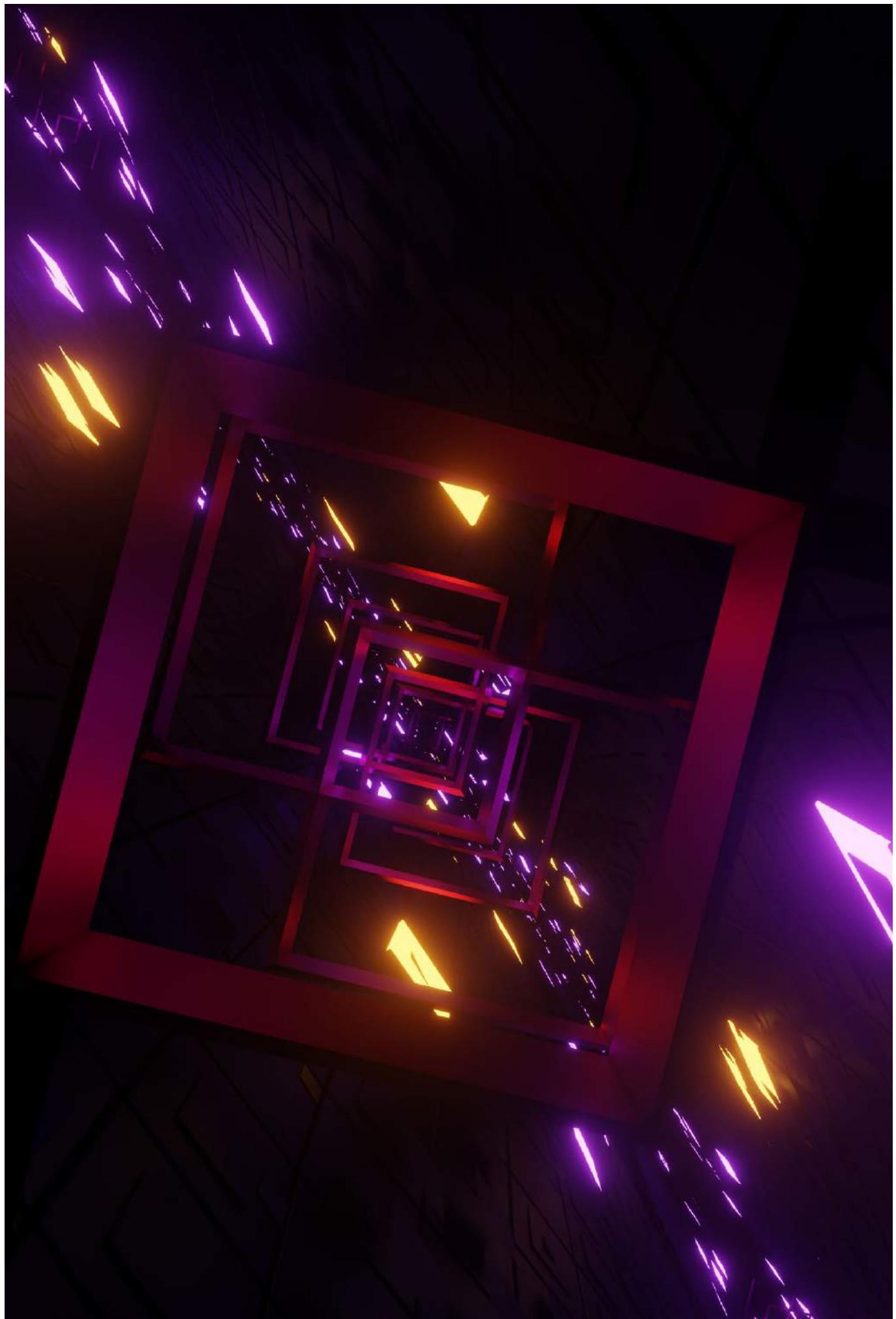


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“There is no specific regulation yet regarding NFTs, but the carefree attitude of early adopters should not serve to elude the reality: NFTs are regulated exactly like any other type of asset you can buy online.”





Distributed ledger technology and non-fungible tokens (NFTs)

As the metaverse is intended to represent a public good based on an open economy, distributed ledger technology (DLT) plays a key role in ensuring that representations of value and transactions in the metaverse are not controlled by any single actor and that they function in a transparent and permissionless manner.

The role of DLT in the metaverse

DLT, which involves the registration and validation of transactions on a decentralized network, provides the operational foundation for various cryptocurrencies such as Bitcoin, Monero, and Ripple's XRP. DLT also underpins protocols such as Ethereum, Binance Smart Chain, and TRON, which support smart contracts – essentially, pieces of code that, like automated machines, trigger or record certain transactions or information upon relevant conditions being met. DLT-based smart contracts have become a cornerstone of decentralized autonomous organizations (DAOs) and decentralized finance (DeFi) protocols, which are governed by transparently encoded rules that can only be changed by their users in a collective manner.

DLT therefore provides an ideal foundation for the exercise of self-sovereign ownership and user-directed exchanges of value. A prime example of this open economy is Decentraland, an Ethereum-based virtual world in which users can interact through games and activities, as well as purchase parcels of land they can use to build and monetize applications, marketplaces, and environments. Decentraland operates through a DAO, and transactions occurring in its virtual environment are smart contract-based. Users can employ a native token, MANA, to pay for avatars, wearables, names, and other items, and can hold unique parcels of land represented by LAND and Estate tokens.

Non-fungible tokens (NFTs)

While cryptocurrencies that are designed or used as a means of payment (for example, Bitcoin or Ether) are fungible (that is, fully interchangeable and replaceable), non-fungible tokens (NFTs) are a means of representing and certifying ownership in an item or content that is intended to be unique. For example, in the case of Decentraland, as referred to above, MANA tokens are fungible, whereas LAND and Estate tokens are NFTs.

While the technology that enables NFTs has existed for several years, NFTs have recently experienced a surge in popularity with the success of NFT-based applications such as CryptoKitties (which allows users to purchase, collect, breed, and sell virtual cats) and NBA Top Shot (which allows users to purchase and collect moments in NBA history, memorialized in video form). The vast majority of NFTs are based on the Ethereum protocol and use either the ERC-721 or the ERC-1155 standard, which ensures the uniqueness of a representation on the protocol.

Beyond the novelty value of being a digital, DLT-based representation of a unique item, some NFTs have use cases that add significant value to the process of transacting in and owning the item. Where NFTs are based on the Ethereum protocol, they can embed smart contracts that, for example, can trigger automated payments to designated persons upon relevant conditions being met. An illustration of this use case would be an NFT representing a piece of music or art that makes a royalty payment to the original artist each time the NFT changes hands. The programmability of NFTs therefore opens up a range of new ways of incentivizing and monetizing creativity.

The content represented by an NFT – for example, artwork, music, literary work, etc. – can be stored on-chain as

“Digital art represented by an NFT enjoys security of ownership but can continue to be enjoyed by the public.”

part of the programming of the smart contract, or, more commonly, the NFT can be a representation of content or an asset that is stored off-chain. In the context of the metaverse, NFTs have proven popular not only due to their suitability to represent unique items such as avatars and virtual land parcels, but also due to the fact that they certify the holder’s ownership of the underlying content while allowing third parties to enjoy that content. Unlike physical artworks that are sometimes confined to a vault and remain unseen by the public for indefinite periods, digital art represented by an NFT enjoys security of ownership but can continue to be enjoyed by the public. This is exemplified by Metapurse, a Singapore-based art collector and metaverse initiative that owns the largest known collection of NFTs (famously, works by artist Beeple) and has issued fractionalized entitlements to that portfolio, which can be purchased by investors. The art represented by the NFTs can be viewed in three custom-built, virtual museums in the Cryptovoxels, Somnium Space, and Decentraland environments.

Legal considerations

Businesses looking to acquire, trade in, or issue digital tokens should, as a first step, confirm the legal categorization of those tokens and whether their proposed activities may be subject to restrictions under applicable law. The nature of this legal assessment will depend on the fact pattern and jurisdictional touchpoints – for example, a developer of a decentralized platform that issues a native governance token to users should seek comfort on the legal treatment of that token in the location where the platform is hosted or the development team operates, as well as under the laws of the countries where the token may be offered to investors for fundraising purposes. A key priority will be to ensure that the token does not qualify as a security or other type of regulated instrument under relevant laws, because this will typically trigger a range of restrictions on the marketing of the token. While the risk of a token qualifying as a security or other regulated instrument may be more acute for fungible tokens that are treated by their users as an interchangeable store of value or investment, the same assessment should also be carried out with regard to any NFT that a business is looking to issue, acquire, or transact in.

With respect to NFTs specifically, it should also be kept in mind that an NFT representing an underlying item does not necessarily mean that legal ownership of or a right (for example, copyright) in that item passes to a purchaser of the NFT. Such transfer of ownership or rights will need to be appropriately documented in the terms governing the transfer (for example, in the terms of use governing the relevant platform where the NFT is traded, or in a contract directly between the purchaser and the seller). Separately, the parties should ensure that the transfer from the seller to the purchaser of the responsibility for storing the underlying off-chain item is appropriately documented, if required.



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NFT





Bitcoins and other crypto-assets

In the near future, Bitcoins and other crypto-assets will probably be the usual tool when paying for music rights and royalties and streaming user fees. Therefore, a level playing field for market participants is of importance.

In September 2020, the European Commission published a draft regulation on crypto-assets. The so-called Markets in Crypto-Assets Regulation (MiCA) is intended to ensure unambiguous handling of cryptocurrencies and to regulate crypto-asset services and crypto-assets that are not already subject to existing European regulation. The current patchy legal framework in different European countries makes it difficult for companies to start a business in this still very new area. In addition, the different national regulations create unequal opportunities for market participants.

Generally, MiCA will have the greatest impact on issuers, service providers, and trading venues. Crypto issuers in particular will have to comply with an information obligation and publish a white paper on their products that must be submitted to the relevant financial supervisory authority. Further, MiCA determines that crypto service providers, such as crypto-asset custodians and operators of trading venues, must have a registered office in a Member State if they want to offer their products and services in the European Union. For smaller companies and fintechs, the regulation could cause certain disadvantages. In Member States where the market has been virtually unregulated to date, companies face high costs due to, for example, the acquisition of licenses or the costs incurred in connection with reporting requirements or a secure IT infrastructure.

The legislative process is currently still at the first reading stage in the European Parliament. After completion of the process, MiCA is expected to come into force at the end of 2022.

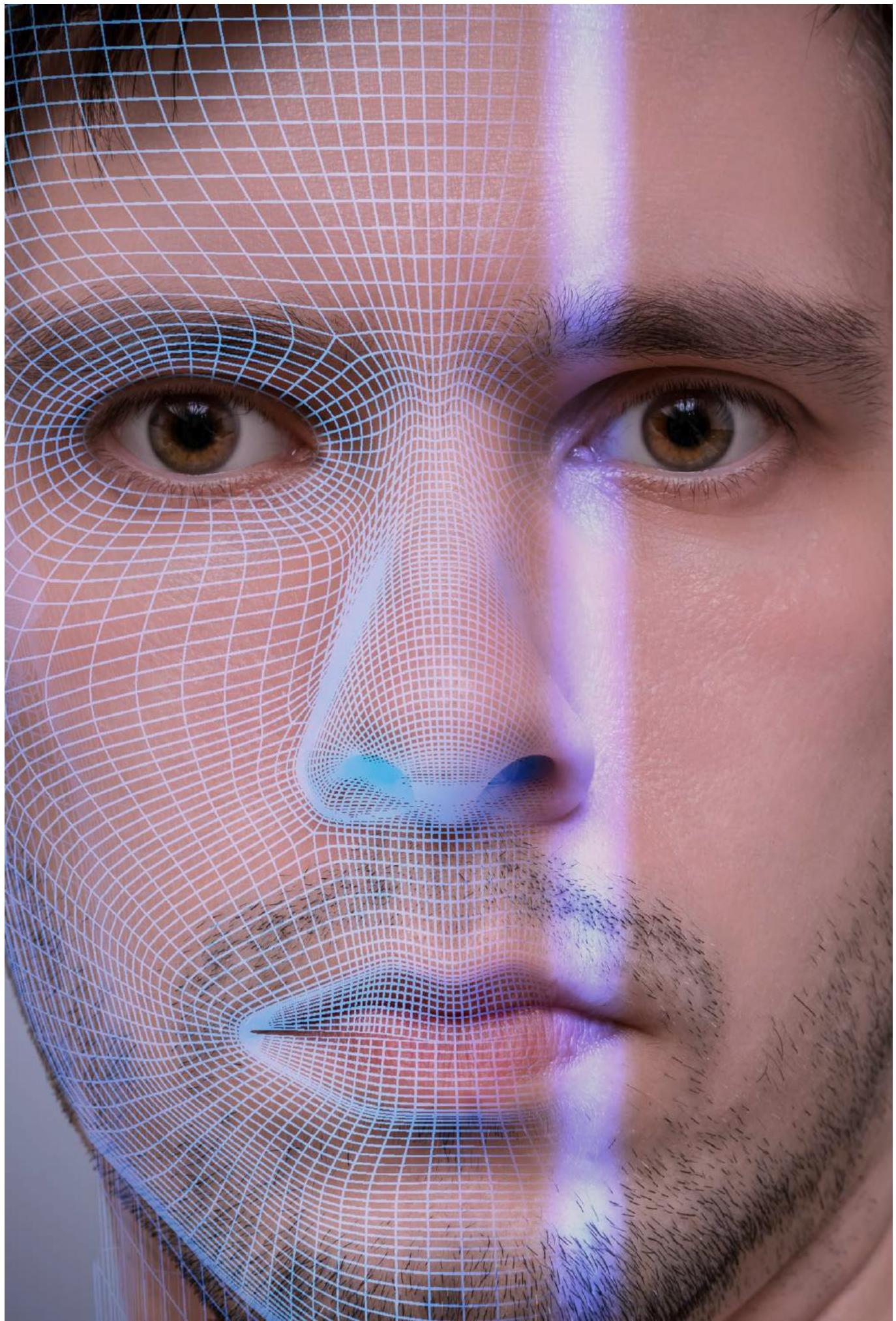
On February 19, 2021, the European Central Bank (ECB) published an opinion on the draft MiCA regulation. In principle, the ECB is generally supportive of MiCA's objectives and its contribution to harmonization, but suggests several adjustments and clarifications. The ECB demands changes with regard to the supervision of so-called asset-referred tokens and sees the need to work out and clarify intersections with other EU regulations concerning financial services. Furthermore, according to the ECB, more detailed discussions are needed concerning which aspects of financial stability and supervision will require stronger regulatory and supervisory oversight by the ECB. As these ECB opinions provide an indication of future policy recommendations and the development of financial regulation, we expect that certain of its proposals will be considered in the further legislative procedure.

We anticipate that the new regulation will not have an extensive impact on German crypto companies since reporting obligations and the handling of crypto-assets specified in MiCA are already covered by existing financial regulations in Germany. This is another reason Germany is already considered a good entry point for companies looking to enter the European crypto market.



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Reputation and deepfakes

Deepfakes take the form of face reenactment (that is, where software manipulates an individual's facial features), face generation (where a new face is created which does not relate to a specific individual), face swapping (where one person's face is swapped with another), and speech synthesis (where voices are re-created). Shallowfakes are similar, but they involve more basic editing techniques.

How do these connect to the metaverse?

By their very nature, deepfakes and shallowfakes are a direct threat to the accuracy of information relating to any individual in the existing digital environment. However, the threat that they pose will only increase as our interactions with the metaverse increase, given that there will be more opportunities for the use of deepfake technology. While many deepfakes have been created as obvious parodies (such as a 2020 deepfake of Richard Nixon announcing the failure of the 1969 Moon landing, or the use of deepfakes of Queen Elizabeth II by a UK public service television network in their 2020 "Alternative Christmas Message"), their increasingly convincing nature means that this technology can be used for more troubling purposes.

What are the legal issues?

Deepfakes and shallowfakes can be used for the manipulation of pornographic material (for example, revenge porn) as well as for political purposes (for example, to fake political statements or actions). Both such uses (which are just two examples among many) can have an obvious and dangerous impact on the privacy and reputation of individuals. This is particularly so for those in the public eye, but also more widely. Deepfakes and shallowfakes can be used to suggest that individuals have made comments or taken part in activities (ranging from the controversial or socially unacceptable to the illegal) when they did not. There are also clear implications relating to the safety of convictions in the criminal justice system.

On the other side of the coin, the existence of such technology allows wrongdoers appearing in unaltered material to claim that it has been altered – again with potential implications for the justice system as well as politics – potentially allowing wrongdoers to claim that video evidence is "fake news."

There are a number of ways that the law can tackle deepfakes and shallowfakes. For example:

- Revenge porn could be dealt with under the Criminal Justice and Courts Act 2015.
- The Protection from Harassment Act 1997 may be helpful in some cases.
- The owner of the copyright in the footage used may be able to bring an action for copyright infringement (although in many cases, the owner may not be the individual featured). Deepfakes created for comedic purposes may be protected by the parody exception under the Copyright, Designs and Patents Act 1988, relating to any work that “evokes an existing work while being noticeably different from it, and constitutes an expression of humour or mockery.”
- Defamation is a potential route in the case of deepfakes that “lower the claimant in the eyes of right-thinking members of society” or cause such members to “shun or avoid” them provided that serious harm is caused. This would be a viable course of action for more serious deepfakes, such as those wrongly suggesting that individuals in the public eye have made a statement or carried out an activity that might cause serious harm to their reputation.
- Passing off may be helpful, for instance, where a deepfake is used to fake endorsement of a product.
- Privacy law may be helpful where footage not intended for public distribution is used, but the fact that most deepfakes are derived from publicly available footage may mean that its use is limited.

- If the deepfake is being used in connection with advertising, the affected individual (including a deceased individual) may have a right of publicity claim within the United States. Right of publicity laws vary by state, with some states, such as New York, California, and Tennessee, extending that protection to after death.



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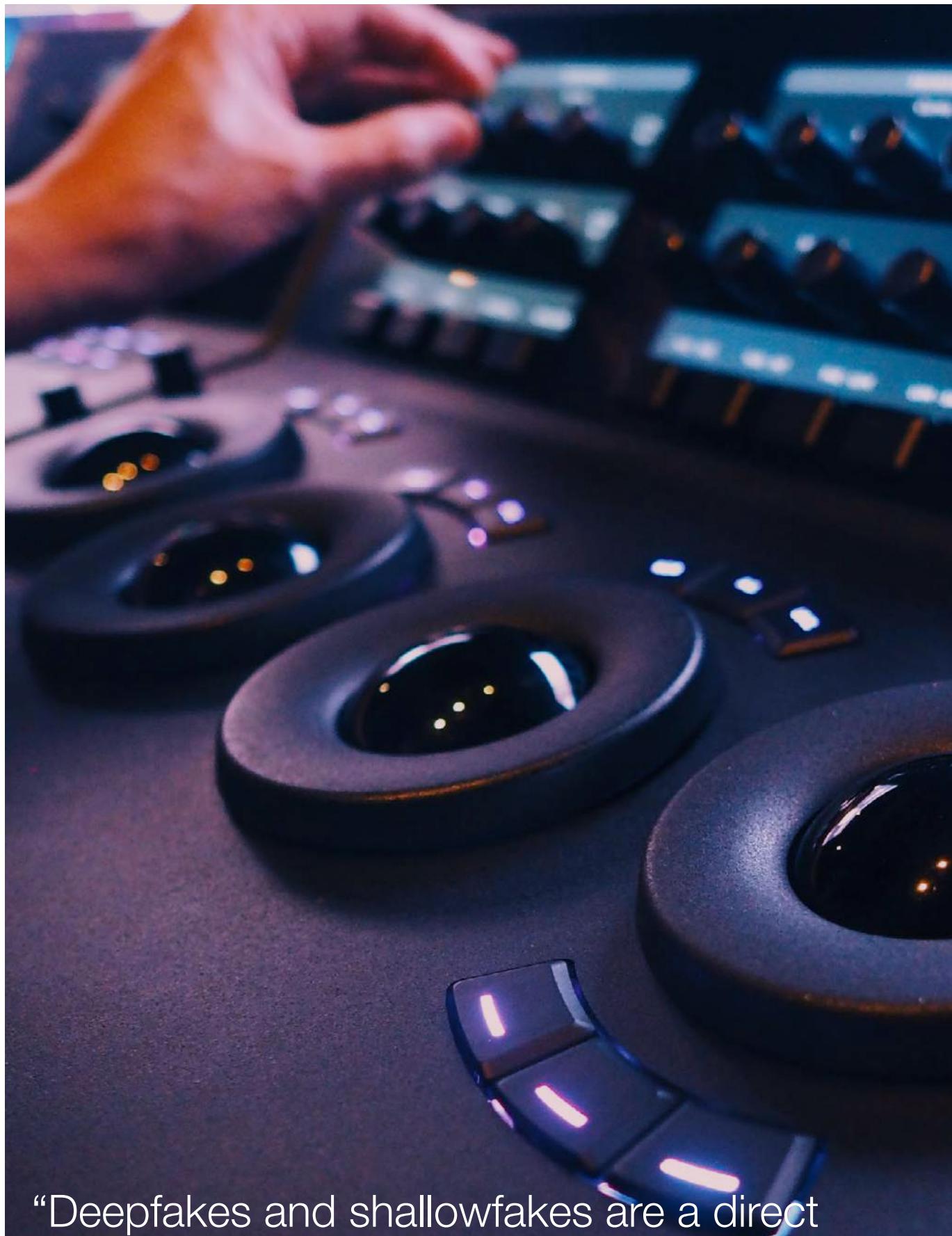


Jonathan Andrews

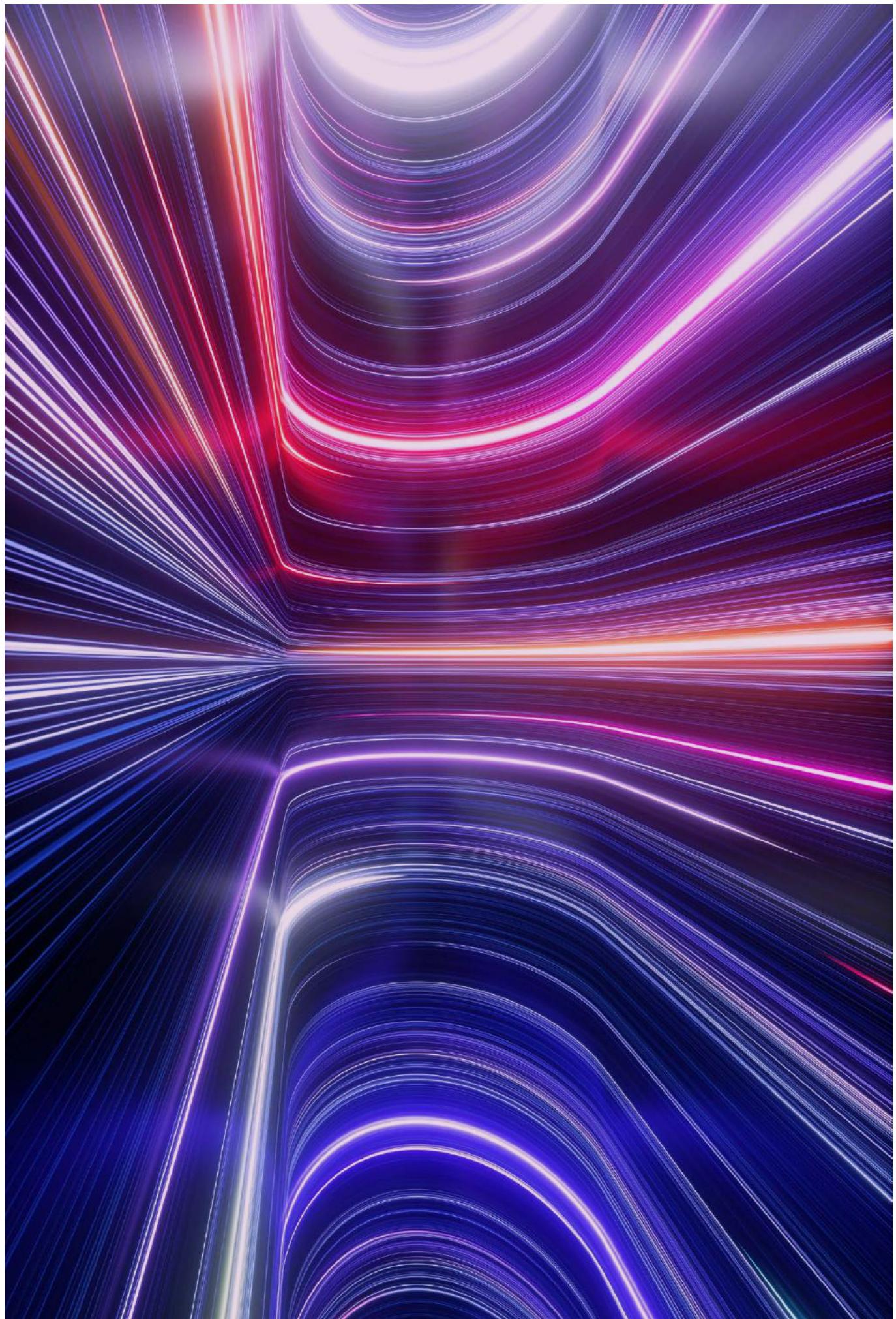
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“Deepfakes and shallowfakes are a direct threat to the accuracy of information relating to any individual in the existing digital environment.”



Managing antitrust and competition risk

Across the globe, almost all competition authorities and legislative bodies have made digital markets a priority area for enforcement. In many countries, specific digital units have been established to ensure effective competition in these markets. The emergence of the metaverse and the reinforcement of the ever-increasing pervasiveness of digitization will undoubtedly come under close scrutiny from competition regulators worldwide.

However, to date, there are more questions than answers on how this should be done.

- As the world becomes increasingly interconnected, how will competition law enforcers adjust to this trend, and will the individual competition authorities be able to find a way to work together to address issues on a global, rather than a piecemeal, individualized basis?
- At what stage should regulators intervene? If they intervene too soon, innovation could be stifled, and if too late, the market could “tip,” causing substantial distortion of competition, risk of monopolization, and emergence of mega-corporations.
- Do regulators have a choice at all of balancing intervention, just in case they risk falling behind rapidly changing digital developments?

- Will the competition tools that have been or are currently being developed to address powerful digital platforms prove to be sufficient, or will they be outdated even before they are effectively applied?
- Will there be a way to provide legal certainty for companies doing business in the metaverse, and will there be guidance that companies can rely on when adapting their business models to the new age?
- What steps should be taken to safeguard consumers in the metaverse jungle?

Even at this early stage, it is possible to identify a number of the issues competition authorities across the world will have to grapple with. The competition issues the metaverse is likely to create can be looked at from different perspectives, including (i) the infrastructure needed in the metaverse, (ii) operating a business in the metaverse, and (iii) the roles of users in the metaverse.

Infrastructure needed in the metaverse

Access to the metaverse and gatekeepers – Competition authorities will likely want to ensure that there is sufficient access to products or services deemed indispensable for effective competition in digital markets, in particular in the metaverse (for example, access to data, hosting/server capacities, critical technologies or solutions for metaverse-specific types of advertisement, augmented reality/display, etc.).

Standard setting and interoperability – In order for the metaverse to operate effectively, it appears likely that there will need to be agreement on technical standards. We expect regulators will want the metaverse and markets therein to remain open and accessible to market participants (in particular smaller players) on FRAND (fair, reasonable, and non-discriminatory) terms, balanced against the legitimate commercial interests of relevant suppliers to incentivize development and innovation. The tensions between intellectual property holders, licensors of standard essential intellectual property, and licensees that continue to be prevalent in a number of sectors can be expected to arise in the context of the metaverse.

- Merger control and ex ante regulation – Today, there is a consensus among competition authorities around the world that ex ante regulation (preventing harm to competition before it occurs) is far more effective, less invasive, and thus generally preferred to ex post regulation (retrospective enforcement activity), which tends to entail lengthy administrative proceedings often followed by even lengthier court proceedings. Ex post intervention often fails to address the competition issues in the fast-changing digital world in a timely manner. Especially in the digital economy, many markets show a high degree of concentration, and the metaverse is unlikely to change this trend. Furthermore, takeovers and mergers can tip a market or create ecosystems that are almost unassailable for competitors. For this reason, regulators are likely to take merger control more seriously than ever in the context of the new digital era.
- Saving innovation from “killer acquisitions” – Innovating firms are often acquired by incumbents, typically in the early stages of product development and often for large amounts that do not appear to be justified by current revenues. Such acquisitions are referred to as “killer acquisitions” where there is a risk that the purchase of a new challenger by an incumbent will eliminate promising, yet likely competing, innovation. Such acquisitions seem all the more likely to occur in the metaverse, as large digital platforms jostle to position themselves to take advantage of the new technology. Competition authorities are developing tools to enhance pre-merger screenings to discourage these acquisitions when competition is negatively impacted, and the authorities can be expected to vigorously enforce these tools in the context of metaverse M&A.

“The overall challenge for regulators will be to keep markets open and free, and to allow companies to do business with consumers in the metaverse.”

Doing business in the metaverse

- The overall challenge for regulators will be to keep markets open and free, and to allow companies to do business with consumers in the metaverse. This is always a challenge for competition authorities in times when new “markets” are developing or major developments or innovations occur with the potential to disrupt existing business models.
- Generally, we expect that the rules currently being developed to address market power identified among certain digital companies will continue to be relevant in the context of the metaverse. A number of the issues that have the potential to arise in the metaverse are already being considered in existing digital markets.
- The tendency for markets to “tip” due to the benefits to users and businesses of a critical mass of other users on the same platform can make it very difficult for new competitors to break into the market.
- Users will need some manner to interface with the metaverse. Where this occurs – particularly if there is only a single interface platform or a small number of interface platforms – those platforms have a benefit in being able to favor their own services in secondary markets within the metaverse over services offered by their competitors. Competition authorities consider this type of self-preferencing practice by digital platforms to be potentially harmful as likely distorting competition and increasing dependencies of third-party businesses from the platform’s services. This practice can therefore be expected to remain on the “blacklists.”
- Advertising markets in digital ecosystems have been the subject of a number of competition investigations in recent years. We expect that competition authorities will continue to take a keen interest in digital advertising in the metaverse, particularly if an advertising-funded business model becomes prevalent.
- The further integration of the digital world with consumers’ day-to-day lives will generate huge amounts of data about individuals’ routines, habits, and preferences. Access to this data can be vital in ensuring the popularity of services offered in the metaverse. The position of the platform provider can, therefore, impart a significant advantage over rivals, serving to reinforce the platform’s market power or enable it to leverage the power to other service areas.

Users in the metaverse

- Over recent years, users have become familiar and comfortable with platforms being provided for free at point of use. It seems likely that users will expect digital services in the metaverse to be available on the same basis. However, not being required to pay money does not mean the consumer is not paying anything. Consumers are generally paying for such “free” services with their data. Given the interconnectedness with so many aspects of their lives in the metaverse, this data will be hugely valuable to businesses. There will be a need for higher privacy standards, more transparency, and a simplification of the ways for consumers to agree to or reject the transfer of their data.
- This personalized information can be used to create increasingly personalized product and service offerings, which may include setting personalized pricing for different consumers for the same product or service based on what the business knows about that consumer (the strength of their preference for the service, their income, other products they have bought, their location, etc.). Competition authorities have already been considering this issue in digital markets and debating whether exploiting customers’ willingness to pay is fair and where the limits of any possible efficiencies will be reached.
- In the metaverse, interoperability will set new standards – but not only from the perspective of enabling businesses to connect to the digital platforms. Interoperability will also likely become a standard requirement imposed by competition policy to require digital platforms to provide consumers with the ability to port their data when deciding to leave a platform. Digital platforms are more likely to gather market power if consumers are “locked in” due to the lack of interoperability and the consequence that data is lost when leaving. If consumers are allowed to migrate their data to competing systems (for example, using an application programming interface), lock-in effects would be diminished, which may promote competition between platforms.



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