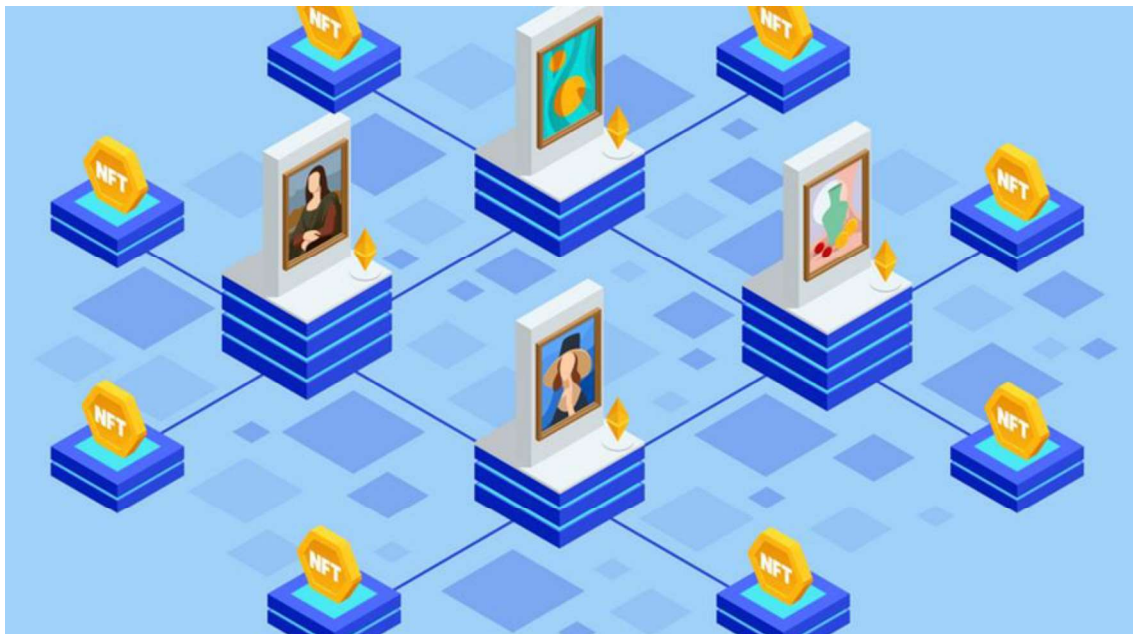


Building blocks for the metaverse – practical IP considerations for NFT investors and creators

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- **NFTs promise to bridge the trends of both the digital and physical worlds and look set to play a significant role in the approaching metaverse**
- **Creators and purchasers of NFTs ought to be aware that they are purely digital assets, and do not confer ownership of any intellectual property in the anchored media**
- **It is vital to ensure that a creator has the necessary rights to create and distribute a NFT, to avoid any later claims of infringement**

Non-fungible tokens (NFTs) are a digital asset based on a unique digital identifier assigned to a corresponding anchor media or object. They have

been subject to increased attention recently, not only from avant garde visual artists and collectors, but also from various commercial players seeking to use them to monetise products and services in new ways. The NFT market has grown rapidly in recent years, with some commentators reporting sales of roughly \$5 billion during the first half of 2021.

As the name suggests, NFTs are a type of token, in essence a digital unit of value. Like cryptocurrencies including Bitcoin, NFTs rely on blockchain technologies to represent and track the unique digital signature of the token. However, while cryptocurrencies depend on fungible tokens that each represent the same interchangeable quantum of value, all NFTs are unique and therefore non-fungible.

NFTs are best known as collectibles. Collectible NFTs include the artist Beeple's collage of 5,000 digital images woven together called *Everydays: the First 5000 Days* (which sold in cryptocurrency valued at roughly \$69 million), or an NFT sold by the founder of Twitter Jack Dorsey of the very first tweet (for roughly \$3 million). Collectible NFTs are often sold through NFT marketplaces, including Foundation or OpenSea. In addition, they are increasingly being integrated in various ways with digital media, physical objects or digital and physical experiences, including via video game developers (eg, Axie Infinity or Decentraland), sports leagues (eg, NBA Top Shot), clothing and fashion companies (eg, Burberry or Dolce & Gabbana) or musicians (eg, Kings of Leon).

NFTs seek to solve an issue at the heart of all digital media, which subsists in a digital world where reproduction is costless and exchange is seamless, subject to applicable royalties for copyright or any other relevant intellectual property. What most applications of NFTs have in common is that they synthetically create a degree of uniqueness – and hence marketable value – for physical or digital media. Many of the video clips that serve as anchors for NFTs on the NBA Top Shot platform, for example, can be readily viewed on YouTube. Yet anchoring such clips to an NFT creates a new scarce asset, on which collectors have spent billions of dollars so far. In a sense, the NFT can serve as a digital analogue to a numbered baseball card or a limited edition print.

The recent spike in interest in NFTs has, perhaps unsurprisingly, occurred at a time when people have been spending more time in front of a screen due to the pandemic. However, it also coincides with a broader trend of growing consumer attention on the provenance of items purchased digitally, on the uniqueness of goods and experiences and on having a more personal connection with those who create and produce what one consumes.

NFTs offer a tool to meld features of the digital world's low-cost reproducibility and ease of exchange with the scarcity, uniqueness, personal connections and provenance that are more characteristic of the physical world. Thus, NFTs bridge these two simultaneous, but apparently divergent, consumer trends. Some of the more bullish NFT commentators even predict that NFTs' ability to bridge these two paradigms means that they will play a crucial role in the coming metaverse. The metaverse – in which a number of major technology companies have invested heavily – can be viewed as the next generation of the Internet, akin to the immersive, online simulation “Oasis” in the novel and feature film *Ready Player One*. The vision is of a ubiquitous digital overlay that would leverage virtual reality, augmented reality and connected devices to create a digital metaverse, which melds the online experience, encompassing gaming, e-commerce, social media and search. Taking this further, NFTs could be integrated into the digital metaverse with real world physical products or services.

Just as NFTs leverage divergent characteristics of digital and physical consumer paradigms, they are enabled by a fusion of contract law and IP law. Purchasers of an NFT usually do so pursuant to a contractual agreement (often embedded in the terms and conditions of the applicable online NFT marketplace), but typically at least part of the value ascribed to an NFT is based on an IP right, usually a copyright or trademark or a licence to the same. The intersection between contract law, IP law and applicable regulatory regimes, on the one hand, and how NFT software is designed to function, on the other, can generate certain practical issues for those interested in creating or transacting in NFTs, which may have growing importance as NFTs evolve from niche collectibles to more widely used digital assets.

What is an NFT and how are they exploited?

When you buy an NFT, what are you actually acquiring? It is not a physical piece of artwork or IP ownership rights in that artwork. Instead, it is purely a digital asset based on data stored on a blockchain. While NFTs are usually anchored to some digital or physical media, they usually do not include ownership of any intellectual property in the anchored media. However, if the anchor media is covered by copyright, trademark or other IP rights, the issuer of the NFT would require applicable authorisations under the rights to issue the NFT.

Blockchain, smart contracts, platforms and minting

Beyond the anchor media itself, NFTs rely on three foundational technical components:

- a distributed ledger (ie, a blockchain) that incorporates smart contracts;
- a smart wallet; and
- a platform.

Building blocks of NFTs



A blockchain is a decentralised public ledger – a structured list of information not controlled by a central authority that anyone in the world can read or, subject to certain software-based rules, write to. There are various blockchain platforms, but the one that has recently achieved prominence and is used most widely for NFTs is the Ethereum blockchain. Blockchains operate on the basis of smart contracts, which are less of a contract in the traditional sense and more a set of software-based rules that determine how and when

changes are made to the applicable blockchain-based ledger. When you buy an NFT, the relevant smart contract is essentially edited to reflect the purchase and afterwards others can look up the ownership of the NFT. Recording ownership information on a blockchain helps to make NFTs more robust – compared to other digital assets with ownership records controlled by a company or government – since the smart contracts that regulate ownership on blockchains are not controlled by a single entity and, therefore, are perceived as less subject to meddling or unauthorised unilateral changes.

Software known as a smart wallet – which can be downloaded to the device of any potential NFT acquirer – links an NFT owner with the applicable blockchain-based ownership record, and facilitates future transfers of the NFT. Popular smart wallets include Metamask, AlphaWallet and Enjin.

An NFT is created by going through a process known as minting. This involves adding the NFT to the applicable blockchain by assigning it appropriate information, including a token number, current owner (via a link to a particular smart wallet), metadata that describes the underlying digital media or other asset to which the NFT is anchored and other functionality or parameters.

Once minted, an NFT may then be sold through an NFT platform, including Foundation, OpenSea or NBA Top Shot. Platforms act as intermediaries between purchasers and sellers (including the initial issuer) of NFTs, and can be open or closed. If you buy an NFT that has been minted and auctioned through an open platform (eg, Foundation), you can subsequently sell this on a different NFT platform via your smart wallet. Conversely, the NBA Top Shot platform has (until very recently) been closed. Rather than acting as a limited intermediary between the creator and initial purchaser, NBA Top Shot served as more of an exclusive ecosystem, whereby subsequent transactions involving NBA Top Shot NFTs would occur. More recently, NBA Top Shot has stated that it will allow NFT owners to transfer their NFTs outside the platform, subject to certain restrictions.

The expanding universe of NFTs

NFTs can be used in many different contexts. To date, they have been anchored to artwork, sports clips, videos, musical performances, virtual land, characters and features in video games and even particular physical assets, and the list continues to grow.

Many of the new applications of NFTs go beyond collectibles to incorporate additional functionality. Even certain collectible-focused NFTs sold on platforms like Foundation include added functionality that provides that the creator of an NFT receives a share of the purchase price of any subsequent sales, thereby allowing them to benefit from subsequent price increases for their works. This follow-on royalty scheme is built into the applicable smart contract, so it happens automatically upon subsequent sales that are recorded in the blockchain. As summarised in Table 1 below, other, more complex, NFTs go even further to include diverse functionality that seeks to convey consumption value, in both the virtual and physical worlds.

Table 1: Examples of NFTs with added functionality

Category	Product	Operator	Description
Sports	NBA Top Shot	Collaboration between NBA and Dapper Labs	Allows collectors to purchase NFTs anchored to digital media of certain moments from NBA games, including a LeBron James dunk. NFT collectors can resell these on a secondary market run by NBA Top Shot (and, apparently in the future, other markets). Revenues for NBA Top Shot of over \$500 million have been reported.
Video games	Axie Infinity	Sky Mavis	Video game with fantasy creatures (known as Axies) with over several hundred thousand active users. The creatures are linked to NFTs, as are some other game features and rights (including particular future governance rights over the gaming platform). Players can earn in-game tokens either by playing the game or breeding their Axies, and are expected

Category	Product	Operator	Description
			to be able to use certain NFT-based assets from the Axies game in other video games in the Axie Infinity universe, or exchange them for money.
<i>Virtual land</i>	Decentraland	Overseen by Decentraland Foundation	Virtual reality platform that allows users to create, purchase and sell various NFT-based assets. Virtual land ownership in the Decentraland game platform, for example, is recorded via NFTs based on the Ethereum blockchain, and a parcel was sold for 1,295,000 MANA (a Decentraland specific cryptocurrency), worth nearly \$1 million at the time of the sale in June 2021 to the company Republic Realm. Virtual land can be resold, but the total amount of virtual land available is limited, based on the initial quantity of NFTs minted.
<i>Music and experiences</i>	<i>When You See Yourself</i> album NFT	Collaboration between Kings of Leon and Yellowheart	NFTs sold on the OpenSea platform in connection with the release of Kings of Leon's new album <i>When You See Yourself</i> , which generated revenues of roughly 750 Ethereum, or approximately

Category	Product	Operator	Description
			\$2 million. Most of these NFTs were anchored to the album, but some, known as 'golden tickets', also included a lifetime pass for front row tickets at the band's concerts and other unique features and experiences related to the band.
Wearables	Blankos Block Party	Collaboration between Burberry and Mythical Games	Burberry-branded NFT-based in-game character and accessories for use in Blankos Block Party game.

These examples suggest that NFTs may be used for much broader purposes than the initial collectible use case that has received attention so far. Some industry commentators envisage entire new hybrid digital-physical ecosystems (eg, the metaverse) emerging as more complex uses of NFTs are honed and perfected. NFTs may be anchored both to virtual clothes in a video game (eg, trainers) but are also linked in some way to corresponding physical trainers in the real world. The digital NFT version of such hybrid trainers could, for example, be a wearable for the digital avatar of the acquirer in video games and virtual reality applications, while the physical version may also be actually worn by the acquirer but still be linked to the digital NFT in the eyes of others in physical proximity to the acquirer through augmented reality glasses and other smart devices. Regardless of exactly how NFTs evolve, they offer new, differentiated and textured ways to interact digitally and physically with consumers, with the potential to generate significant economic value and innovation going forward.

Key issues

NFTs rely on an interplay of contractual and IP rights. Their nature as tradeable tokens of value means that they may raise a number of legal considerations. While the various issues highlighted below could be applicable to all NFTs to varying degrees, the practical ability of a potential NFT acquirer to conduct diligence or negotiate contractual terms to address them may be limited to a subset of entities that are acquiring NFTs in exchange for substantial consideration, or others that are creating new products or services based on NFTs, as opposed to individuals obtaining NFTs pursuant to the standard terms of an established NFT platform. The issues presented below are not intended to be exhaustive. Depending on factors including the NFT, the identity of the buyer and seller, the intellectual property underlying the digital media to which the NFT is anchored and the nature of the platform additional considerations may apply.

IP sufficiency at the ‘minting moment’

If anyone is entitled to sell a *Pulp Fiction* NFT, surely it should be Quentin Tarantino, writer and director of the film. Tarantino seemed to believe as much when he announced his intention to sell NFTs anchored to handwritten excerpts from the original film script. However, a November 2021 lawsuit filed by film studio Miramax, it claimed that it in fact has the sole right to create such NFTs, and that Tarantino would violate various contractual and IP rights by issuing a *Pulp Fiction* NFT. Tarantino transferred most of his IP rights in *Pulp Fiction* to Miramax in 1993, but retained certain of them, including for “print publication”. The dispute appears to hinge on whether NFTs featuring these excerpts qualify as print publications. Whatever the result of this ongoing dispute, it highlights the point that in order to mint an NFT, a creator should ensure that their IP rights, whether licensed or owned, match up with the particular NFT that they are intending to mint.

By leveraging blockchains, NFTs offer a comparatively robust method for recording a chain of title, from the creator of the NFT through subsequent transfers. While post-minting transfers of NFTs are governed by the underlying blockchain technology, as illustrated by Tarantino’s attempt to create *Pulp Fiction* NFTs, the identity of an NFT’s creator and, more importantly, the sufficiency of the IP rights held by them to mint a particular NFT, is not necessarily assured by the underlying technology.

The upshot is that NFT acquirers cannot assume that the creator of the NFT had sufficient IP rights to create it. If the creator is not the original artist or author of the artwork or media to which the NFT is anchored, there is a potential that they – or subsequent acquirers of the NFT – could become subject to claims of infringement on the basis of the distribution or display of that artwork or media. In these cases, careful consideration of whether the creator has obtained sufficient rights to create and distribute the NFT is necessary. Such rights may be obtained by the creator by acquiring title to underlying intellectual property (through assignment) or a licence to the IP rights in the anchor media. Given that NFTs are comparatively new, as the Tarantino case above illustrates, IP licensing language drafted prior to the advent of NFTs may raise uncertainty on this point, since by definition uses in respect of NFTs will not be mentioned in the licence grant, and it is often ambiguous as to how earlier-drafted licensing language applies to NFTs.

While it may seem straightforward to confirm that a particular artist created an artwork to which an NFT is anchored, it is often not easy in the digitally-intermediated and anonymous world of NFTs. As a practical matter, most acquirers of NFTs likely rely on the platform on which the NFT is created and distributed to vet the underlying rights. However, this may not be taken for granted. First, the platform on which the NFT is created might not assume any responsibility in the event that a third-party IP claim is made against an NFT minted, used or distributed on that platform. In fact, under various publicly available terms of service for these platforms, such liability and associated representations and warranties are specifically disclaimed, leaving the acquirer of an infringing NFT potentially without recourse in that circumstance.

Further, it may be challenging to adequately perform due diligence into the rights underlying any particular NFT, especially where its creator relies in whole or in part on copyright, trademark or publicity licence rights received from a third party. NBA Top Shot moments, for example, appears to incorporate IP rights and rights of publicity owned by players, teams and the league in various ways; the intellectual property is likely subject to complex licensing arrangements and other contractual restrictions among multiple parties.

Where there is third-party intellectual property incorporated by a creator into an NFT, an acquirer should carefully review the licence terms to confirm, that relevant IP rights can be sub-licensed by the creator and that any such sub-licensed rights are sufficient to permit subsequent NFT transfers, as well as any ancillary functionality of the particular NFT at issue (eg, uses in a video game or in connection with other platforms). Similarly, if any third-party intellectual property to which the NFT is anchored is licensed with temporal, geographical or other restrictions, these restrictions could constrain or undermine the value of the NFT. In the worst case, if the third party has a right to terminate the licence granted to the NFT creator, and sub-licences granted through previously created NFTs do not survive, the rights of NFT holders in the intellectual property necessary to distribute and display the NFT may be terminated altogether.

Links to the underlying media

Although most NFTs serve to allocate certain rights related to digital content, the NFT smart contract usually does not actually include code to represent the digital content itself. Instead, smart contracts frequently involve metadata that simply links to an image of the media to which an NFT is anchored. Below is an example of the metadata that is identified by searching the applicable smart contract of the famous Beeple NFT that sold at auction for \$69 million.

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{"title": "EVERYDAYS: THE FIRST 5000 DAYS", "name": "EVERYDAYS: THE FIRST 5000 DAYS", "type": "object", "imageUrl": "https://ipfsgateway.makersplace.com/ipfs/QmZ15eQX8FPjfrtdX3QYbrhZxJpbLp...", "description": "I made a picture from start to finish every single day from May 1st, 2007 - January 7th, 2021. This is every motherfucking one of those pictures.", "attributes": [{"trait_type": "Creator", "value": "beeple"}], "properties": {"name": {"type": "string", "description": "EVERYDAYS: THE FIRST 5000 DAYS"}, "description": {"type": "string", "description": "I made a picture from start to finish every single day from May 1st, 2007 - January 7th, 2021. This is every motherfucking one of those pictures."}, "preview_media_file": {"type": "string", "description": "https://ipfsgateway.makersplace.com/ipfs/QmZ15eQX8FPjfrtdX3QYbrhZxJpbLp..."}, "preview_media_file_type": {"type": "string", "description": "jpg"}, "created_at": {"type": "datetime", "description": "2021-02-
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16T00:07:31.674688+00:00"}, "total_supply": {"type": "int", "description": 1},  
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, "raw_media_file": {"type": "string", "description":  
"https://ipfsgateway.makersplace.com/ipfs/QmXkxpwAHCtDXbbZHUwqtFucG1RMS6..."}}}
```

Which IP rights accompany the NFT?

Once IP sufficiency at the minting moment has been evaluated, the next question concerns the scope of the IP licence granted by the NFT creator to the NFT acquirer, since, as noted, NFTs usually do not include ownership of IP rights in the underlying media. Generally, these licence terms need to be sufficient to support the desired uses and functionality of the NFT. Some examples of relevant licence terms or limitations that may be considered include the following:

- Permission to exploit anchored media – many NFTs do not include any rights for the purchaser to exploit the underlying media. NFTs tied to artwork, for example, typically are not accompanied by rights to the underlying art; thus, the owner of the NFT often has only a very limited right to display the art in digital form. Some NFTs provide limited exploitation rights; NBA moments may be displayed in the NBA Top Shot platform. The distinction between owning an NFT and having rights to the underlying media is not always understood by purchasers. In an interview with CNBC, Beeple stated: “I think that people don’t understand that when you buy, you have the token [or NFT]. You can display the token and show you own the token, but, you don’t own the copyright... if you buy a [physical] painting, you just bought the painting... You did not buy the copyright to that picture. And so, it’s very similar with these tokens.”
- Transferability – one key functionality inherent to most NFTs is the ability to transfer them pursuant to the rules of the applicable platform and underlying blockchain technology. Any inbound IP licence granted to the initial NFT acquirer must accordingly permit the transfer of the applicable IP licence rights to subsequent NFT owners, in a manner

consistent with how such transfers are viewed as occurring on the applicable platform and underlying blockchain technology. Any mismatch between the transfer and assignment rights of the IP licence and those of the NFT itself could conflict with an NFT's intended functionality and undermine its value.

- Exclusivity – some degree of either absolute or partial exclusivity is inherent to NFTs that purport to have value as collectibles or as unique or scarce assets. For both NFTs expected to be absolutely unique (one-of-a-kind NFTs like Beeple's *Everydays: the First 5000 Days*) and those believed to have partial uniqueness (eg, a limited edition of 350 NFTs sold by Formula One driver Pierre Gasly), the underlying terms of the licence from creator to acquirer should reflect the bargained-for degree of exclusivity. If the underlying licence has no exclusivity, from a technical and IP perspective, an artist could auction a purportedly unique NFT on one marketplace and subsequently auction an identical one on a different marketplace, thereby potentially undermining the value of the first NFT. While the underlying blockchain technology restricts future unauthorised transfers or duplication of a particular NFT, it would not in itself prevent an NFT creator from making multiple NFTs linked to the same anchor media. This issue could also be addressed by contractual limitations binding on the applicable artist or author, limiting their ability to create subsequent NFTs based on the same anchor media.
- Tail rights – the inbound licence rights from an NFT creator to an acquirer should generally be irrevocable, worldwide and perpetual regarding the intellectual property (whether copyright, trademark, publicity right or otherwise) in the digital media to which the NFT is anchored, because otherwise the link between the NFT and the anchor media could fall away. Any conditionality on, or early termination rights for, the IP licence rights granted to an NFT acquirer in respect of the anchor media could undermine the value proposition of the applicable NFT.

These examples do not constitute an exhaustive list of considerations. They demonstrate that an NFT acquirer should confirm that the licence rights from the NFT creator, first, are sufficient to permit the intended functionality and uses of the NFT and, second, reflect and effectuate the exclusivity, scarcity or other bargained-for limitations from which the NFT derives part of its

value. While the relevant licence terms and key functionalities will differ from case to case, the general point is that a mismatch between an NFT's key functionalities and the underlying IP licence terms could undermine its value.

Platform risk

The blockchain technology undergirding NFTs is attractive because it offers a comparatively robust manner of recording a chain of title that is in theory independent of control by any central authority, such as a company or government. In practice, the value and utility of many NFTs is still tied to particular commercially operated software platforms. Use and exchange of the moments in NBA Top Shot, for example, has generally been limited to use or exchange on the applicable platform. Those investing in, or otherwise monetising, such platform-centric NFTs need to also consider the relevant platform as part of their due diligence. The questions to ask regarding these platforms will vary on a case-by-case basis, but will likely cover many of the same questions as one would ask in evaluating any other digital platform, namely whether it is well funded, what person or entity stands behind the platform, and the nature of backup and disaster planning.

Regulatory and reputational risks

The novelty of NFTs means that their interaction with various existing regulatory and legal regimes is still uncertain. Several regimes that have so far generated some interest among NFT commentators are the following:

- Securities laws and regulations – while certain prior applications of blockchain technologies (including initial coin offerings) generated considerable scrutiny from securities regulators, such issues have not been a major concern so far for most NFTs. Although some commentators have suggested that simple NFTs tied purely to an artwork present a low risk from a securities law perspective, as NFTs become more widespread and include greater functionality it is possible that they may garner more attention from securities regulators in the future. Some commentators have noted that fractional NFTs, in which an investor purchases only a portion of an NFT, may be more

likely to constitute a security subject to applicable regulations. Given that the applicability and restrictions imposed by securities laws and regulations are fact-specific and can vary between jurisdictions, such issues should be considered on a case-by-case basis. That said, this issue has already generated some litigation, as a class-action lawsuit has been filed against Dapper Labs (one of the entities behind NBA Top Shot), alleging that the Top Shot moments constitute unregistered securities.

- **Commodity Futures Trading Commission jurisdiction** – while no clear regulations or guidance have been provided so far, NFTs may be deemed to be commodities, and certain transactions involving them (ie, derivatives) may be subject to oversight by the Commodity Futures Trading Commission, which has previously deemed cryptocurrencies and various other intangibles to be subject to its regulatory authority.
- **Environmental issues** – blockchain-based technologies are often energy intensive. While the Ethereum blockchain offers substantial efficiency improvements over some prior blockchain technologies (and further energy-use improvements may be forthcoming in the future), society's increasing focus on environmental issues may make the energy use associated with NFTs a consideration for those creating or investing in them, both as a reputational matter and to the extent implicated by environmental commitments or regulatory requirements.
- **Anti-money laundering** – NFTs could potentially be relevant to anti-money laundering concerns, given that the often anonymous and difficult-to-trace nature of transactions involving NFTs could provide opportunities for those attempting to illicitly transfer economic value. Similar concerns have already arisen with cryptocurrencies, thus resulting in increased regulatory scrutiny in this related asset class.
- **Privacy** – given the comparatively anonymous nature of blockchain-based transactions that rely smart wallets, privacy concerns have not so far been front and centre for NFTs. However, some commentators have suggested that certain information used in NFT transactions – including the identifying signature for a virtual wallet – may constitute personal information under applicable regulatory regimes. If so, privacy regulations could increasingly affect the landscape of blockchain-enabled transactions, including NFTs. The right to delete or the right to

be forgotten, for example, is difficult (if not impossible) to comply with in the context of an immutable blockchain not centrally managed by any person or entity.

- Cybersecurity risks – there are already a number of well-publicised examples of bad actors using NFTs in fraudulent or unauthorised ways, and it seems likely such occurrences will only increase in frequency as NFTs become more ubiquitous. If an NFT owner's credentials are stolen, potentially valuable NFTs can be transferred, and these transactions cannot be unwound easily given the decentralised nature of the underlying blockchain technology.

As the use and economic importance of NFTs increase, these legal and regulatory issues, along with those perhaps not apparent today, may grow in significance as the existing regulatory and legal structures react to issues raised by the creation, transaction and use of NFTs.

Ex-ante diligence is especially important

A key feature of blockchains is their decentralised nature, which could complicate efforts to rely on traditional legal mechanisms to address NFT-related risks and disputes. The distributed nature of the information that constitutes an NFT means that even if ordered by a court or arbitrator, it may not be possible to unwind or alter prior blockchain-based NFT transactions, since there is often no single person or organisation that retains the right to reallocate ownership of an NFT. This structural characteristic is compounded because many transacting in NFTs are anonymous and undertake transactions in cryptocurrencies that can be difficult to control or trace. While many NFT boosters laud this as a feature, recent breaches involving various cryptocurrencies and NFT-related frauds have also shown that such automated systems can go awry.

These undesirable scenarios may lead to increasing public demand for courts or other human-centric mechanisms to have more power to review and intervene effectively in NFT transactions. This change, if realised, may also have drawbacks. Yet, until such human-centric recourse mechanisms (or better automated ones) are developed, those active in the NFT space would do well to remember that, for now, traditional legal recourse may be difficult to obtain for disputes involving NFTs. The upshot is that thorough diligence of

the relevant counterparties, technology, IP rights and contracts increases in importance, since ex-post legal remedies may not be readily available.

The challenges faced today by NFTs are not immutable

There are many unanswered legal and regulatory questions in the world of NFTs. The answers to these may determine whether NFTs are only a transient fad, or become a new ubiquitous vehicle for property ownership – and perhaps even serve as a cornerstone for the coming metaverse. While the future is hard to predict, the flexible nature of NFT technology may itself adapt to better address, through technological architecture, some of the legal risks and issues identified here. One could imagine, for example, various technological adjustments that would make minting an NFT more transparent, verifiable and robust, either through using digital means (eg, links to a verified social media account) to authenticate the identity of the NFT creator or through linking to the applicable IP ownership or licence documentation as part of the NFT's metadata.

While the value of NFTs comes in part from their fairly autonomous and decentralised nature, NFTs' value is also dependent on various underlying contractual and IP rights, and their future use will likely be subject to regulatory frameworks in various ways.

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