

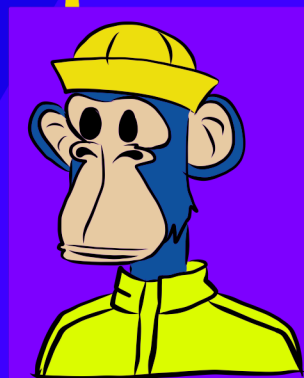
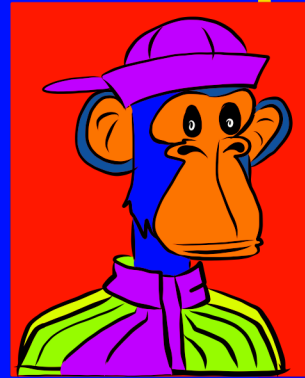
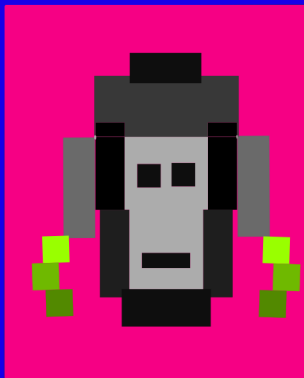
NFTs

A TECHNOLOGICAL AND LEGAL PRIMER

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The Esya Centre is a New Delhi based technology policy think tank. The Centre's mission is to generate empirical research and inform thought leadership to catalyse new policy constructs for the future. It aims to build institutional capacities for generating ideas that will connect the triad of people, innovation, and value to help reimagine the public policy discourse in India. More details can be found at www.esyacentre.org.

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EXECUTIVE SUMMARY

Non-fungible tokens or NFTs are a new asset class seeing exponential growth. A frenzy of activity in 2021 saw leading brands, artists, creators and entrepreneurs create or invest in their own NFTs, as consumers sent more than \$30bn worth of cryptocurrency to NFT related smart contracts that year. The surge gives rise to many questions about the technology, regulation and applications of NFTs.

This primer is divided in two sections. The first provides an overview of NFT technology, illustrating current and future use cases in art, collectibles, fashion, gaming, the metaverse and real estate, with an emphasis on Indian developers and entrepreneurs. It introduces the stakeholders in this ecosystem—including creators, investors, and decentralised autonomous organisations or DAOs.

Section 2 highlights the interface of NFTs with existing regulations. It assesses the validity of smart contracts under the Indian Contract Act, and describes the initiatives taken by other nations to legalise smart contracts. The implications of classifying NFTs as commodity derivatives, securities and digital goods are also discussed. Policymakers in the US and EU are regulating NFTs based on their underlying use, on a case by case basis. This approach will help protect consumer interest without constraining innovation.

With NFTs being used mainly in the creative industries, intellectual property has been another focus of legal scrutiny. We chart the interface between NFTs and intellectual property, in particular copyright and personality rights. Key questions include the transfer of rights in the underlying work when an NFT is purchased, the copyrightability of an NFT, and the possibility of copyright infringement. With NFTs also being used to commercialise personality rights, like the name, image or likeness of celebrities, there is a risk they will be used to exploit individuals' personality rights without their consent. We suggest measures for marketplaces and creators to mitigate the risk of IPR abuse.

Financial considerations in the use of NFTs are also discussed, including the potential of NFTs to be used for money laundering. Marketplaces could adopt KYC/AML obligations to help trace money flows and engender transparency. With most NFT marketplaces currently outside India, the purchase and sale of NFTs also gives rise to foreign exchange management concerns. We illustrate how the provisions of the Foreign Exchange Management Act might apply to NFT transactions, and the possible impacts on marketplaces and creators. Uncertainty around the tax treatment of NFTs is also discussed. Guidance from tax authorities including the Central Board of Direct Taxes will help stakeholders determine the taxes owed, ensuring greater revenue flows for the exchequer. Possible NFT marketplace obligations under the Consumer Protection Act are also discussed.

SECTION 1
TECHNOLOGY AND MARKET OVERVIEW

What exactly are Non-fungible Tokens?

An NFT is a digital asset written in computer code and recorded on a blockchain ledger, used to prove ownership and authenticity of an asset, which can be either physical or digital. Unlike cryptocurrencies which are fungible (interchangeable), each NFT is unique. In other words one Bitcoin is the same as any other Bitcoin, and is convertible on a 1:1 basis. But each NFT is unique and non-fungible, and cannot be replaced or switched with any other NFT. This characteristic of uniqueness and non-fungibility drives the value of NFTs, as it allows users to establish ownership and authenticity for virtual and physical goods in the digital realm, something that was previously difficult to do.

What is the technology behind NFTs?

NFTs make use of smart contracts, stored on blockchains. *Blockchain* refers to a decentralised data repository containing information on all transactions conducted across a peer-to-peer network. Once a block of data has been created and encrypted, it cannot be changed by anyone with access to the blockchain. This makes each block immutable. The aim is to prevent double spending and create scarcity in the digital realm.

A *smart contract* is a computer program stored on a blockchain that runs only when certain predetermined conditions are met. Smart contracts are used to automate workflows and execute agreements, limiting human error. Nick Szabo, a pioneer of smart contracts, defines them as “*a set of promises, specified in digital form, including protocols within which the parties perform on these promises.*”ⁱ

In most cases smart contracts run on if-then logic. If certain conditions are satisfied, then the smart contract will automatically execute the programmed instructions without further human intervention. A simple analogy is a vending machine, which dispenses an item only when a certain set of buttons has been pressed.

In an NFT, the smart contract is programmed to include a representation of digital or physical items, usually in the form of metadata or code.ⁱ This is done through a process known as *minting*—the publication of a unique instance of the NFT on the blockchain. The creator embeds a data file into a smart contract that forms part of a new block which is then encrypted. Once minted, it cannot be edited or deleted. The smart contract containing this data file usually includes the wallet address of the owner, a unique token ID, and a link to the original work (Image 1).

Non-fungible tokens are minted using different standards than fungible cryptocurrency tokens. The latter rely primarily on the [ERC20 token standard](#). They contain certain properties that make them fungible—each token is exactly the same as others in type and value. Due to this fungibility the ERC20 standard is well suited for minting tokens for financial assets, fiat currencies and physical commodities like gold, which usually require 1:1 conversion and interchangeability.

The ERC20 standard is not suitable, however, for representing digital or physical assets that are non-fungible and unique. Thus, the [ERC721 token standard](#) was introduced in 2018. Each token made using ERC721 has a special variable called the token ID, which is unique for each token.

There is also the [ERC1155 standard](#) which allows for the management and representation of both fungible and non-fungible tokens using the smart contract interface. ERC1155 allows developers to deploy several different tokens without creating a separate contract for each.

ⁱ While the actual image or digital asset itself can be embedded into a smart contract, this is usually very expensive. Hence, creators choose to include the metadata of the image instead.

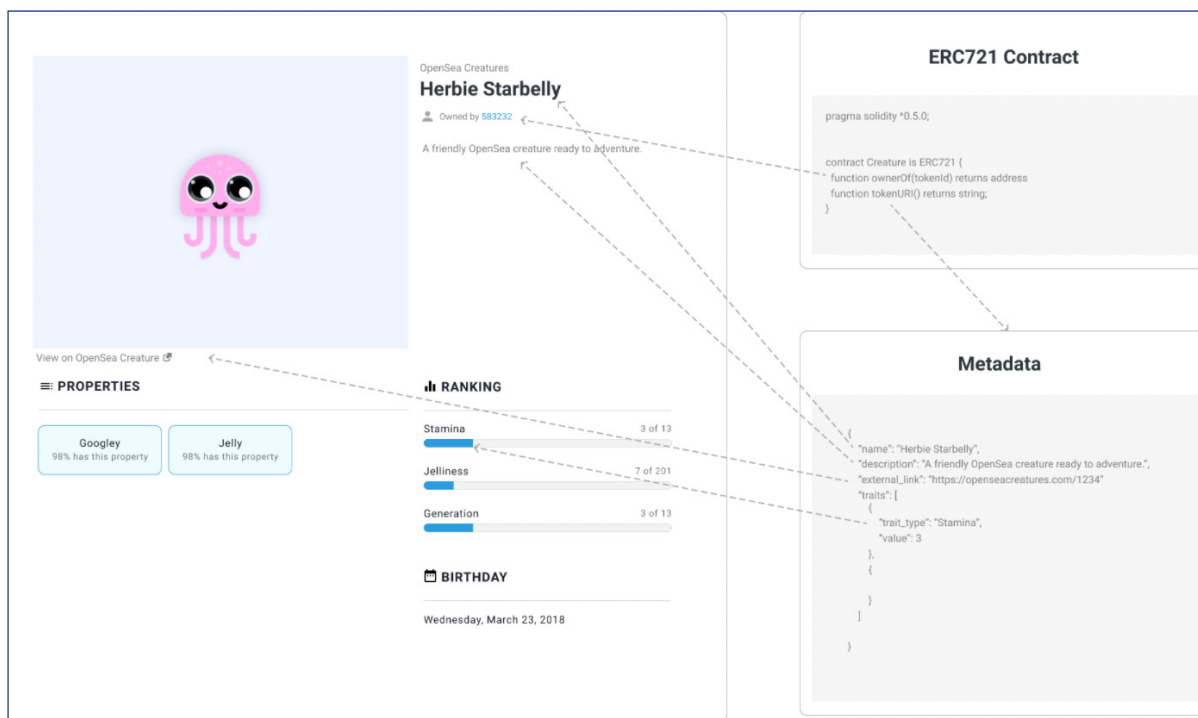


Image 1: Smart contract and metadata for an NFT (Source: OpenSea)

In sum, NFTs enable the tokenisation of physical and digital assets and their storage on immutable blockchains. This opens up several use cases, as discussed below.

What are the use cases for NFTs?

NFTs enable the online authentication and ownership of goods, creating digital scarcity. This allows creators, merchants and allied businesses to earn from tokenised versions of their creations and goods. As a result NFTs can boost e-commerce as well as the creative economy. While most use cases listed below relate to artists, musicians and retailers, NFTs can be programmed for a variety of uses, giving rise to new forms of consumer engagement and community management. The benefit of this asset class for the creative economy is currently constrained by cybersecurity risks, the possibility of duplication and fraud, and regulatory uncertainty.

Art

Kevin McCoy minted the first NFT in 2014. Known as '[Quantum](#)' it represents a work of generative art. Indeed art continues to be one of the most popular use cases for NFTs, and people enjoy collecting digital art for the same reasons as physical art: aesthetics and social status. Some of the most popular NFT art collections, like CryptoPunks and the Bored Ape Yacht Club (BAYC), are primarily used as profile pictures on social media platforms to reflect status and membership in an exclusive community.

NFTs are an increasingly popular way for artists to monetise their creations and achieve valuations previously unimaginable. Last year for instance Beeple sold a collection of his digital artworks known as *Everdays: The First 5000 Days* for \$69mn, one of the most expensive works of art ever sold. Incidentally the collection was [bought by an Indian](#), Vignesh Sundaresan, aka Metakovan. Among artists of Indian origin the highest-grossing NFT is a [rendition of Vishnu's fourth avatar](#), by Ishita Banerjee, which sold for over Rs 2.5 lakh on the WazirX NFT marketplace.



Image 2: A collection of CryptoPunks, each of which is worth more than a few hundred thousand USD

Collectibles

Besides art, NFTs are widely used to represent collectibles such as trading cards and works of music. Indeed the legacy music industry will likely see significant disruption from NFTs, which enable musicians to tap their fan base directly for revenue from their songs and albums instead of relying on streaming platforms and record labels. [Sonu Nigam](#) recently became the first Indian musician to monetise a song in the form of an NFT, for his first English track 'Hall of Fame'. On platforms like [Sound.xyz](#) musicians can sell NFTs of their songs to listeners, who can claim ownership and participate in exclusive listening parties, directly supporting their favourite artists.

Being one of a kind, NFTs also add value to the longstanding practice of trading cards, commonly associated with sports. A leading example is NBA Top Shot, through which users can purchase highlights of their favourite sporting moments to flaunt on social media platforms. [NBA Top Shot](#) mints a limited number of NFTs for specific sporting highlights, creating scarcity and demand in the digital realm. Similarly, [Sorare](#) is a digital card trading platform where users can collect and exchange football cards. These cards are then used to assemble squads of players that compete in various fantasy sporting events.

Most NFT related activity in India has centered on collectibles and digital art. The hype was spurred by the minting of NFT collections by celebrities and sportspersons including [Dinesh Karthik](#) and [Amitabh Bachchan](#). The digital platform Rario has tied up with Indian cricketers including Rishabh Pant to sell highlights and

iconic moments as digital collectibles to fans. Given the massive adoption of Virtual Digital Assets (VDAs) in India (where about 15 million people hold VDAs) it's safe to say there are good signs for the NFT ecosystem in the country.

Gaming

Another trending area for the use of NFTs is gaming. Gamers have purchased in-game virtual goods such as character skins and weapons for a while now. NFTs add an element of rarity to these goods by making them more valuable. This is exemplified by [Axie Infinity](#), a Pokémon-style game in which each character, or Axie, is minted as an NFT possessing unique attributes that differentiate it from others. The Axie Infinity platform was [recently valued](#) at more than \$3bn. Indian developers have also explored gaming as a use case for NFTs. The blockchain based fantasy sports platform [DeFini](#) will integrate NFT gaming in 2022. Similarly, Gurgaon based Totality Corp is engaged in creating [Zionverse](#), a metaverse game based on Sanskrit mythology in which the in-game characters will be represented by NFTs.

Fashion and retail

The latter half of 2021 saw major developments highlighting the worth of NFTs for fashion and retail brands. In September Dolce & Gabbana sold its inaugural collection of NFTs representing both digital and physical items. [Adidas](#) partnered with the Bored Ape Yacht Club (BAYC) and other notable NFT influencers to launch its collection of NFTs comprising physical and digital objects in December as part of its *Into the Metaverse collection*.

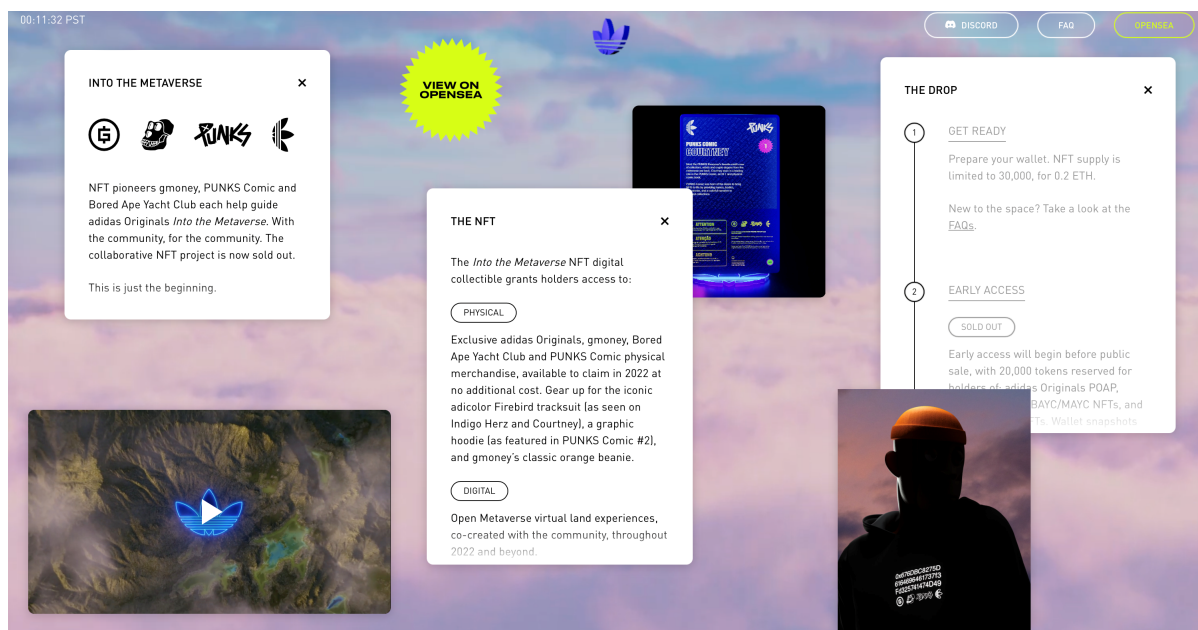


Image 3: Into the Metaverse NFT collection by Adidas

Collection holders were offered access to exclusive physical and digital offerings including comics, gear and community experiences in the Sandbox metaverse.

It was also revealed that [Nike](#) holds a patent for CryptoKicks, which enables the tokenisation of shoes and authenticates their ownership. Buyers of physical shoes will also be able to generate a digital version that can be customised and used in many different ways. While no Indian brand has yet adopted NFTs at similar scale, leading designer Manish Malhotra [auctioned sketches of a few iconic outfits](#) designed by him as NFTs in collaboration with the Lakmé Fashion Week on the WazirX NFT platform. The synergy between NFTs and fashion is unsurprising, given that uniqueness and rarity are aspects essential to both.

Metaverse

The Metaverse—a name given to immersive digital worlds where users can interact with one another—is one of the most compelling use cases for NFTs. Consider Decentraland, an immersive virtual world where users explore, create and play together through digital avatars. Items including parcels of land are minted as NFTs that can be purchased using MANA, Decentraland's native cryptocurrency. Users can also import NFTs purchased outside Decentraland into the virtual

world as usable items.

Real estate

NFTs hold tremendous potential to revolutionise the real estate market. A property can be minted as an NFT which is then fractionalised or split up into several smaller parcels that retail investors can purchase. These investors then receive a share in the property's rent or profit from any capital gains from a sale. Fractionalised NFTs allow a larger set of individuals to participate in the real estate sector. While this is still an emerging use case, fractionalised real estate NFTs are already available for purchase on platforms such as [Fractal Prop.](#)

Events and ticketing

Tickets to concerts and events such as Burning Man act not only as authentication passes to gain entry, but often serve as memorabilia or collectible items for attendees. NFTs take this a step further, allowing artists and organisers to pair beautiful and intricate badges or passes with real world utility, providing access to premium food stalls or exclusive merchandise. NFT-based tickets also help resolve problems often associated with physical tickets, such as black marketing and duplication.



Image 4: Examples of NFT tickets (Source: NFT.Kred)

Finance

Virtual and digital assets enable trustless and global peer to peer transactions. As a result, users can transact with each other without the involvement of an intermediary or trusted third party, like a bank. This is known as decentralised finance or DeFi. NFTs are playing an increasingly important role in DeFi. Decentralized Lending Protocols, such as [Arcade](#) and [Larix](#), accept NFTs as collateral and issue loans to users based on the underlying value of an NFT.

These are some of the use-cases of NFTs being implemented at scale. In future it is likely that an increasing number of digital and physical goods will be tokenised and represented as NFTs. These tokens may find application in proving digital identity, representing conventional financial assets, and even the sale of crop yields by agriculturists.² Some analysts argue that in future all forms of monetary value will be represented as NFTs.³

Who are the stakeholders involved in the NFT ecosystem?

The ecosystem being formed around NFTs comprises a range of different stakeholders. A brief overview is provided below.

Blockchain infrastructure

The first and perhaps most important stakeholders are the infrastructure providers on which NFTs are created and sold, i.e. *blockchains*. Most major NFT projects, such as CryptoPunks and BAYC, were minted on Ethereum, the first blockchain to support smart contracts. However, blockchains like Ronin (an Ethereum sidechain that caters to Axie infinity) and Solana have seen increasing adoption by NFT projects. This is because minting NFTs on Ethereum can prove to be quite expensive and slow. The high transaction costs on Ethereum have led developers to consider creating NFT marketplaces on layer 2 chains, which offer faster, less expensive transactions, without compromising on the security and decentralisation of the layer 1 Ethereum blockchain. Polygon (formerly Matic) which was founded by three Indian developers is currently the leading scaling solution and has seen growing adoption by NFT marketplaces including NFTically (also founded by Indians). In the future we expect to see NFT activity split more evenly across different blockchains.

NFT Exchanges

Another fundamental part of the infrastructure is the *platforms or exchanges* that use the blockchains mentioned above to facilitate the sale and purchase of NFTs. Most users interact only with the exchanges, and do not usually access the underlying blockchain. These exchanges or marketplaces come in three major forms: open, curated and proprietary.⁴

Open marketplaces like Rarible, OpenSea and SolanArt have seen a significant rise in popularity and user engagement during the past year. The 'open' characteristic of these platforms is that anyone can mint or sell NFTs.

Curated marketplaces add a degree of exclusivity to the kinds of NFTs traded on the platform. Marketplaces like SuperRare and Nifty Gateway focus on handpicked artist creations, or collaborations with top creators. WazirX, one of the few Indian NFT exchanges, is also a curated or gated marketplace, and in June 2021 it received

Exchange	Trade Volume	Active Users
Axie Infinity Marketplace	\$3.94bn	1,624,169
OpenSea	\$14.68bn	1,387,357
AtomicMarket	\$323.1mn	895,199
NBA Top Shot	\$776.5mn	492,039
Magic Eden	\$380.6mn	226,454
Solanart	\$593.5mn	170,703
Rarible	\$277.9mn	92,115
Foundation	\$126.9mn	25,589
WazirX	\$3.2mn	962

Table 1: Trading volumes and active users for popular NFT marketplaces
(Source: DappRadar, The Block and Mint)

over 15,000 applications from potential creators within days of its launch. Community-owned NFT marketplaces like Vibranium have also emerged during the last year. These platforms facilitate creators by minting and hosting NFTs at very reasonable rates.

Proprietary platforms only allow the sale of NFTs created by the marketplace operator. The most successful example is NBA Top Shot. The high level of scarcity creates extraordinarily high pricing and demand.

Content creators and owners

Individual content creators actively create and mint the art, music and other creations highly sought on open and curated marketplaces like OpenSea and Rarible. This stakeholder group comprises digital artists, musicians and other creators leveraging NFTs to monetise their work. In most cases they hold intellectual property rights to the creations and earn royalties for their use. Indian artists and creators are increasingly using NFTs to distribute their works domestically and abroad. The enthusiasm for NFTs as a vehicle to disseminate and monetise art was visible at [NFT Kochi](#), an international conference, art exhibit and festival featuring leading NFT creators from India. Notable creators who attended the event include Ishita Banerjee, Anantha Nadamel and Prasad Bhat.

Corporations are also leveraging NFTs to earn revenue from existing brands, characters and intellectual property. Sega, a video game developer recently announced the sale of NFTs for [Sonic the Hedgehog](#), a popular character to which it owns the rights.

Investors and buyers

Investors and buyers make up the demand side of the ecosystem. Demand for NFTs is fuelled by their novelty, utility, social status and return on investment. A number of NFT projects yielded over 1000x returns in the past year, and this has been followed by growing involvement of speculators in the market. A recent report finds that NFT investments appear to be driven primarily by retail investors (>\$10,000) with minimal institutional involvement (Chart 1).⁵ This stands in contrast to VDA investments, which are driven by institutions.

Share of NFT transactions by transfer size, 2021

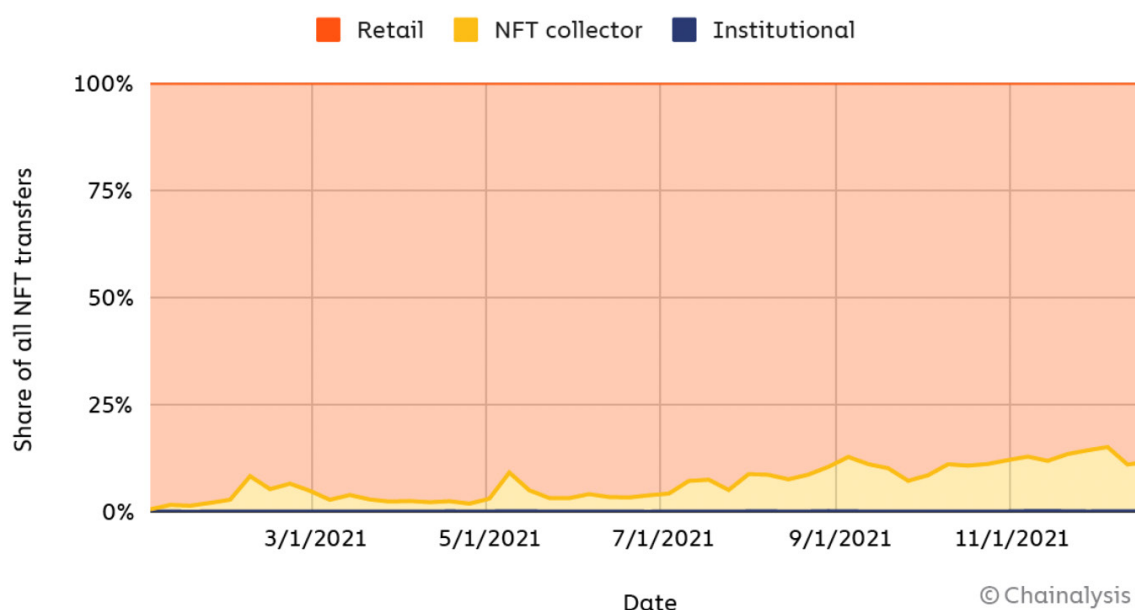


Chart 1: Average NFT Transfer Size (Source: Chainalysis)

DAOs

Decentralised Autonomous Organisations or DAOs are another subset of the NFT ecosystem. Internet-native entities with no central leadership, they are community governed, and operate using smart contracts that execute transactions whenever the majority-vote condition is met. In the NFT space they are mostly consumer or creator collectives.⁶ Among the most popular is APE DAO, set up by the collector Kylo. eth to collect BAYC NFTs. In one instance they fractionalised their Bored Ape NFTs into 1,000,000 tokens which promptly sold out in four days.⁷

Most valuable NFTs exist in limited edition collections, such as BoredApes or CryptoPunks. Given their recent boom in popularity it is hard for individuals to participate without investing north of \$1000 on average for these collectibles. By joining DAOs aligned with their interests, consumers and collectors join the market by collectively owning assets and deciding what to buy or sell. Creator collectives can help emerging artists too, by purchasing their NFTs in exchange for DAO tokens. These tokens represent membership and voting rights in the DAO, allowing artists to shape their industry, and to play a more active role as influencers within a larger collective. For instance, Colours of India is an artist DAO set up to empower artists of south Asian origin by increasing awareness of the NFT space and its utility in the art market in India.

SECTION 2
LEGAL OVERVIEW

While several jurisdictions have introduced laws and regulations to govern virtual and digital assets (VDA), no country has yet proposed an overarching regulation for NFTs, given the emergent legal and regulatory concerns associated with their use. We identify the interface between NFTs and the existing legal architecture to highlight key concerns for creators, marketplaces and regulators.

The Legal Basis of Smart Contracts

Consideration of the regulatory issues stemming from NFTs must begin by analysing the legal basis of the underlying technology—smart contracts. As described earlier, a smart contract is an event-driven computer program that runs automatically when certain conditions are fulfilled. Despite their name not all smart contracts fulfil the requirements of a legal contract, which require:

- a. A valid offer made by a competent party
- b. Its acceptance by another competent party
- c. In exchange for valid and legal consideration, giving rise to a binding legal relationship.

In some cases smart contracts may exist merely to collect data or automate certain processes, and do not fulfil these conditions.⁸

HOWEVER, NFT SMART CONTRACTS CAN BE CONSIDERED LEGAL CONTRACTS BECAUSE THE ELEMENTS OF AN OFFER AND ITS ACCEPTANCE GIVING RISE TO A LEGAL RELATIONSHIP ARE USUALLY PRESENT.

However, NFT smart contracts can be considered legal contracts because the elements of an offer and its acceptance giving rise to a legal

relationship are usually present. The creator offers to sell their NFT (offer) for a certain price (consideration) which is agreed to by the buyer or investor (acceptance).⁹

The legality of an NFT smart contract will hinge on whether the consideration offered in exchange for the NFT, usually some VDA, is seen as valid and lawful. Section 23 of the Indian Contract Act defines what can be considered lawful consideration.ⁱⁱ With the Supreme Court's decision in *IAMAI vs. RBI*, VDAs are at present not illegal in India.¹⁰ The Court held that VDAs are capable of being considered intangible property or goods, both of which constitute valid and lawful consideration, as they are identifiable and possess some value, and do not defeat the provisions of any existing law. While the Government has previously introduced Bills seeking to outlaw cryptocurrencies, it is well established that the term 'law' in Section 23 refers only to laws enacted by the legislature.

The Government may also choose to explicitly recognise smart contracts as valid, to dispel any lingering confusion about their legality. Jurisdictions including Italy, Belarus and the US states of Arizona and Tennessee have enacted laws conferring legal status on smart contracts to forestall any complications in their adoption and use.¹¹

The Tennessee Bill, for instance, explicitly defines a smart contract as an “*event-driven program, that runs on a distributed, decentralised, shared, and replicated ledger and that can take custody over and instruct transfer of assets on that ledger.*” The Bill further provides that no contract relating to a transaction shall be denied legal effect, validity or enforceability solely because it contains a smart contract term.¹² And in Italy, smart contracts will satisfy the requirement of ‘*forma scritta*’, or proof of a written contract. While contracts in Italy can be written or oral, certain transactions require

ii Consideration is unlawful if it's:

- a) forbidden by law, or
- b) would defeat provisions of any law, or
- c) fraudulent, or
- d) involves or implies injury, or
- e) regarded as immoral or against public policy

proof of a written contract. As per the new law, parties can use a smart contract to satisfy this requirement.¹³

Classifying NFTs

NFTs can be programmed to fulfil many different use cases, as illustrated in the first section. This makes their regulatory classification challenging. For instance, digital art or collectible NFTs closely resemble digital commodities and commodity derivative contracts, while fractionalised NFTs (F-NFTs), which distribute the ownership of physical goods among thousands of holders and promise returns on profit, are more like securities or shares.

The different use cases also present different levels of risk for consumers and investors. Event access or ticketing NFTs for instance pose little to no risk to end-users and do not need serious regulatory scrutiny. Indeed most jurisdictions have left NFTs largely unregulated, even while bringing other digital assets under finance and securities regulators' purview.

The European Council's Regulation of Markets in Crypto-assets proposal seeks to create a uniform regulatory framework for cryptocurrencies and digital assets. It will apply to public offerings of VDAs, their listing on trading platforms, and the licensing of VDA service providers. However, NFTs are likely to be excluded from the MiCA's purview. The Council's negotiating mandate, which forms the basis for discussions with the European Parliament, specifically states that *"the regulation should not apply to crypto-assets that are unique and fungible with other crypto-assets, including digital arts and collectibles, whose value is attributable to each crypto-asset's unique characteristics and the utility it gives to the token holder."*¹⁴

Conversely, F-NFTs present elevated risk as they are distributed across several retail investors

who become exposed to the underlying asset's volatility. Moreover F-NFTs are fungible and exchangeable (and will therefore be covered under the MiCA.)ⁱⁱⁱ This is recognised in the negotiating mandate which states, *"The fractional parts of an unique and non-fungible crypto-asset should not be considered unique and fungible."*¹⁵ The US Securities and Exchanges Commission follows a similar approach to fractionalised investments in physical artworks. While sales of traditional art (a good or commodity) are usually out of its ambit, the SEC exercises jurisdiction over offerings of fractionalised artworks by platforms like Masterworks. These are listed as offerings with the SEC, given how closely they represent securities.¹⁶

In the Indian context, the Finance Bill 2022 includes NFTs within the definition of "VDAs".^{iv} The Bill empowers the Central Government to specify which digital assets would constitute "non-fungible tokens" for the purposes of the Income Tax Act via a notification in Official Gazette. Unlike VDAs, which are defined in legislation and will be debated in Parliament, the definition of an NFT is left entirely to the Executive. This can potentially lead to uncertainty and ambiguity for participants in the NFT ecosystem.

Given the nascency of this asset class, policymakers should avoid adopting rigid classifications and instead regulate NFTs case by case, by considering the purposes for which the NFT is being used and the potential risk it presents for investors. As the mainstream uses of NFTs become more apparent, regulations can be customised to serve the twin objectives of fostering innovation and protecting consumer interest.

NFTs and Intellectual Property

For the moment NFTs are mainly being used in

iii F-NFTs become fungible as the actual NFT is usually locked in a vault and several identical shares based on the NFT are issued to investors. Each share is the same as another share and can be traded and exchanged.

iv The definition of virtual digital assets, under the proposed Section 2(47A), includes "non-fungible token or any other token, by whatever name called"

art, collectibles, fashion and retail. Intellectual property is a central aspect in each of these use cases, and much of the legal scrutiny of NFTs has focused on their interface with intellectual property rights, in particular copyright and personality rights.

Copyright

Copyright is a set of rights that exist in an original creation, such as a literary, dramatic, musical or artistic work or a film or sound recording. Under the Indian Copyright Act 1957, the author of a work is usually the first owner of copyright and enjoys a bundle of rights, including rights of reproduction, communication to the public, adaptation and translation of the work. Given that NFTs are being used to represent artistic, musical, literary works as described above, it is relevant to study their interface with copyright law.

A common misconception about NFTs is that the purchaser also acquires the copyright to the underlying work. In most cases this is not true. As discussed earlier, NFTs usually contain metadata about the work in question and not the work itself. When an NFT is sold, a new smart contract is created which contains NFT metadata such as the purchaser's digital wallet address. Absent any further licence or assignment, the ownership and copyright of the work remain with the creator.¹⁷

Sections 19 and 30A of the Copyright Act stipulate that any licence or assignment of copyright must be recorded in writing and duly signed by the assignor. However, exchanges such as Mintable do specify that copyright transfer is available for some NFTs. In this context the purchasers of NFTs must carefully evaluate what they are buying, and should study the additional licence documents (if any) to verify whether the copyright in the underlying work is included with the purchase.

Copyright Transferable	✓ Available
Downloadable File	✓ Available
Resellable NFT	✓ Available

Image 5: NFT exchanges such as Mintable make it clear when the copyright in the underlying work is transferable

Ownership of the underlying work is not usually required to mint an NFT. While online marketplaces have created mechanisms to verify whether NFT creators own the rights to the underlying work, either directly or through a licence, these mechanisms are often nominal.^v It remains possible for users to mint NFTs representing works to which they hold no rights, raising copyright infringement concerns. Indeed the creation of copyright infringing NFTs is already a serious problem, with numerous high-profile celebrities and artists stating that their works were reproduced digitally as NFTs without permission. The production company Miramax recently filed a copyright infringement suit against director Quentin Tarantino for his plan to sell NFTs based on the movie Pulp Fiction.¹⁸

Another notable case is Tokenized Tweets, which minted NFTs based on popular tweets by celebrities and other famous personalities. While the group's Twitter handle was removed and the NFTs deleted from the marketplace, the instance highlights how easily NFTs can be used to infringe copyright. (See image 6)

Given these concerns, NFT creators should ensure they own the underlying copyright or possess a licence to reproduce the work digitally. Platforms should create effective grievance redressal mechanisms to allow copyright owners to request a takedown of infringing NFTs. The terms of service for leading marketplaces such as OpenSea already state that infringing content will be taken down in accordance with provisions of the Digital Millennium Copyright Act, the US copyright statute.¹⁹ Indian NFT marketplaces should set

^v For instance, Rarible's criteria for the grant of a verified badge: "verified badges are granted to creators and collectors that show enough proof of authenticity and active dedication to the marketplace. We are looking at multiple factors such as active social media presence and following, dialogue with community members, number of minted and sold items."



Image 6: William Shatner's tweets were sold as NFTs by the individuals behind the handle @tokenizedtweets

up similar mechanisms, as failure to do so may result in the loss of safe harbour provided for intermediaries under the Information Technology Act, and leave them liable for illegal actions by users of their platform.^{vi}

Section 2(w) of the IT Act defines an intermediary as any person who receives, stores, transmits or provides any service with regard to an electronic record^{vii} on behalf of another person. The section explicitly includes online marketplaces within the definition of an intermediary, so prima facie, NFT marketplaces would qualify. But the situation is less straightforward for non-custodial NFT marketplaces like OpenSea. These marketplaces do not exercise control over users' NFTs, wallets, or the underlying blockchain. They only provide a peer-to-peer network enabling users to discover and purchase artworks. It can be questioned whether non-custodial marketplaces are intermediaries since they neither receive, store or transmit the NFTs in question.

Given that non-custodial marketplaces do provide a service in regard to an electronic record, however, it will be prudent for them to establish mechanisms complying with Section 79 of the Information Technology Act and the Rules issued thereunder.

vi S. 79 of the Information Technology Act exempts intermediaries from liability for the actions of third parties on their platforms provided they meet requirements laid down in the section and the Intermediary Liability Rules.

vii "electronic record" means data, record or data generated, image or sound stored, received or sent in an electronic form or microfilm or computer generated microfiche

Personality Rights

Personality rights refer to an individual's right to exploit their name, image, likeness, and other facets of personality for commercial gain. While not explicitly recognised under statute, personality rights have been established in India through judgments of the Supreme Court and High Courts.²⁰

NFTs provide a novel and effective way for individuals to commercialise their personality rights. As illustrated in the previous section, celebrities like Amitabh Bachchan have issued NFTs based on their images and likeness. At the same time, they also create avenues for exploiting an individual's personality rights without their authorisation or consent.

For instance, the NFT below (Image 7) is based on an image of noted singer Abel Tesfaye but does not appear to have been created under licence or with his consent.

It is well established in law that commercial exploitation of an individual's name, image or likeness without their consent violates their personality rights. In the case of *Titan Industries vs M/s Ramkumar Jewellers* the Delhi High Court noted: "When the identity of a famous personality

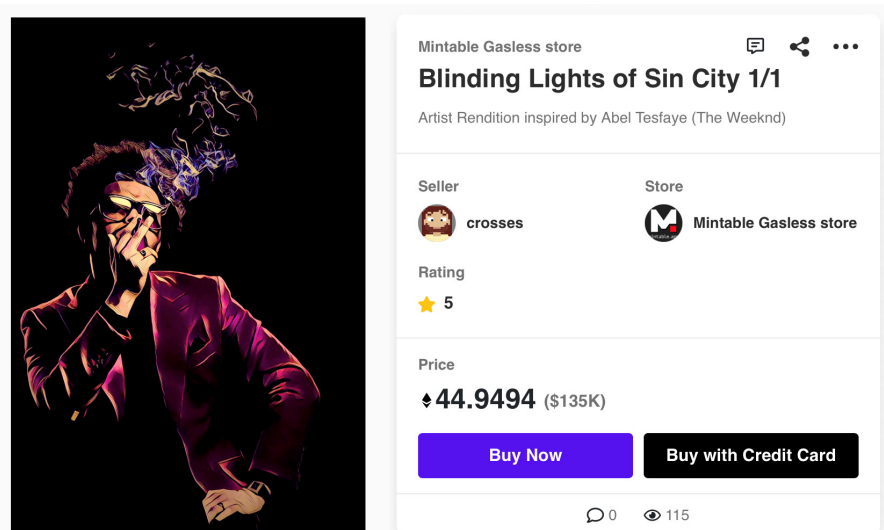


Image 7: 'Blinding Lights', an NFT inspired by singer Abel Tesfaye, without explicit authorisation or consent.

is used in advertising without their permission, the complaint is not that no one should commercialise their identity but that the right to control when, where and how their identity is used should vest with the famous personality. The right to control the commercial use of human identity is the right to publicity.²¹

Creators should be careful not to mint NFTs resembling celebrities or carrying their name or likeness without authorisation. Exchanges could also work proactively with celebrities to ensure that all NFTs carrying their name, image or likeness are verified before being offered for sale.

Money Laundering

Money laundering is used to disguise the illegal origins of criminal proceeds. Proceeds that are laundered usually emanate from embezzlement, insider trading, bribery or fraud.

Traditional art is one of the most commonly used assets for money laundering, because the commercial values of artworks are highly speculative and subjective. Launderers may purchase art for high prices and move their illegal proceeds into the legal financial system, in a process known as placement. Thereafter they would need to integrate the purchased artwork itself, perhaps by moving it to a freeport.^{viii} Once

integrated, the artwork can be sold to the next buyer, allowing the launderer to recover their wealth from a legalised source. According to the UN Office on Drugs and Crimes, nearly \$3 billion worth of art transactions in 2018 were directly attributable to money laundering and financial crimes.²²

NFTs are perhaps even better suited to money laundering, as they do not need to be stored physically and can easily be transferred across borders. The fact that most exchanges only require a wallet address to purchase an NFT provides a high degree of anonymity, crucial for successful money laundering.²³ Hypothetically a person looking to launder illegally obtained or untaxed money could create an NFT and list it for sale on a marketplace using an anonymous account. They could then buy the same NFT using another wallet address and register the proceeds as legal proceeds from the sale of art.

Given the amount of money flowing through the NFT market, the sector is likely soon to attract the scrutiny of international financial organisations such as the Financial Action Task Force.

To allay concerns about money laundering, NFT marketplaces can introduce Know Your

viii Freeports refer to maritime ports or airports with simplified procedures for customs and tax.

Customer / Anti-Money Laundering (KYC/AML) requirements for creators and sellers. This will help trace money flows, imparting greater transparency to NFT transactions. KYC/AML requirements would also help foster trust with regulators as well as end-users, paving the way for mass adoption of NFTs.

The Prevention of Money Laundering Act and Rules specify KYC and due diligence requirements for banks and other financial institutions. Section 11A requires all reporting entities (including banks, financial institutions and other intermediaries) to verify the identity of their clients using an Aadhaar card, passport or other officially recognised identity documents. Under Section 12AA reporting entities must conduct further due diligence prior to the commencement of certain transactions.²⁴ This includes authenticating the customer's identity, recording the purpose of the transaction and examining the customer's source of funds. The RBI Master Circular on KYC norms consolidates the various rules and circulars issued by the central bank under the Act, on the prescribed procedures for customer identification, transaction monitoring and risk management.²⁵ Cryptocurrency exchanges in India have already implemented KYC/AML requirements for users under a self-regulatory code based on these provisions. NFT marketplaces would do well to do the same.²⁶

Foreign Exchange Management Concerns

As most notable NFT marketplaces are located outside India, an individual resident in India using these platforms to buy or sell NFTs can be regarded as making crossborder transfers. These may be governed by the Foreign Exchange and Management Act 1999. Absent guidance from the Reserve Bank of India on the treatment of crossborder transfers of VDAs or NFTs, determining how NFTs would be treated under FEMA needs extrapolation from existing provisions and case law.

The treatment of NFTs under FEMA will depend on how they are classified. NFTs are essentially a

form of computer code or software. In the case of *Tata Consultancy Services vs. State of Andhra Pradesh* the Supreme Court held that the term 'goods' cannot be given a narrow meaning, and includes all kinds of tangible or intangible moveable property. It held that tangible or intangible property becomes 'goods' if these possess utility, can be bought or sold, and are capable of being transmitted, stored, delivered and possessed. It held that since software satisfies all three requirements it would constitute 'goods'.²⁷ It follows from this that NFTs can reasonably be classified as 'intangible goods' under FEMA as they satisfy the same three requirements.

A second issue in determining the treatment of NFTs under FEMA is to ascertain the situs or location of the NFT. This will decide whether the transaction takes place across borders. NFTs are stored on the blockchain, which is in most cases a globally distributed ledger. In the IAMA case the Supreme Court noted that "*virtual currencies cannot be stored anywhere, in the real sense of the term, as they do not exist in any physical shape or form.*"²⁸ While this statement relates to virtual currencies, it is equally applicable to NFTs, which are also blockchain native.

Reference to previous decisions by Indian courts dealing with the situs or location of other intangible assets such as intellectual property rights will help clarify how the location of an NFT is likely to be determined. In *CUB PTY Ltd. v. Union of India* the Delhi High Court held that the location of an intangible asset is where its owner resides.²⁹ It is probable that a similar approach would be used for NFTs.

But determining the owner of an NFT can be a complex task. For an NFT purchased from a custodial or proprietary marketplace, it can be assumed that the marketplace itself is the owner, since the NFT was either created by the marketplace or is stored in its custody. The location of the marketplace would then be treated as the NFT's location as well, and using an NFT marketplace situated outside India to buy or sell NFTs could conceivably be deemed the import or export of intangible goods. A slew of rules and regulations including the FEMA (Export of

Good and Services) Regulation 2015 and FEMA (Current Account) Rules 2000 would apply to these transactions.

In this situation moreover, transactions involving the sale and purchase of NFTs would need a corresponding remittance of fiat currency through authorised banking channels. NFTs purchased using cryptocurrency do not have a corresponding remittance of fiat, and may violate the FEMA and other regulations mentioned above.

It is also a challenge to pinpoint the owner of an NFT that was traded peer to peer—either directly between users, or through a decentralised or non-custodial exchange. In such situations the wallet addresses of the transaction parties are the only information available to determine the identity and location of the NFT owner. And in most cases the wallet address is not linked to a physical location.

INTRODUCING THE KYC/AML CHECKS DESCRIBED ABOVE MAY HELP RESOLVE THE PROBLEM, BY REQUIRING NFT MARKETPLACES, CENTRALISED AND DECENTRALISED, TO RECORD ESSENTIAL INFORMATION ABOUT USERS' IDENTITY AND NATIONALITY FOR THE PURPOSE OF FOREIGN EXCHANGE MANAGEMENT.

Introducing the KYC/AML checks described above may help resolve the problem, by requiring NFT marketplaces, centralised and decentralised, to record essential information about users' identity and nationality for the purpose of foreign exchange management.

Foreign Direct Investment in NFT Marketplaces

The growing popularity of NFTs in India has spurred demand for marketplaces and other services that make it easy for Indians to purchase and mint NFTs. The first section of this paper noted the emergence of platforms like WazirX and

Vibranium, which provide convenient on-ramps for Indian NFT enthusiasts. Other stakeholders in the crypto space, such as CrossTower, have also signalled their intent to create NFT marketplaces in India.³⁰ Given the enthusiasm for VDAs, such marketplaces are likely to attract significant capital flows from domestic and international sources.

Capital flows from foreign sources are subject to India's Foreign Direct Investment Policy, implemented by the Department for Promotion of Industry and Internal Trade. Its applicability to NFT marketplaces will depend on the nature of NFTs being offered for exchange.

The Consolidated FDI Policy 2020 defines e-commerce as the “*buying and selling of goods and services including digital products over digital & electronic network.*”³¹ The definition is broad enough to include most use cases of an NFT, including art, music and fashion, so most NFT marketplaces will likely be classified as “e-commerce entities”.^{ix}

The FDI limits for an e-commerce entity depend on the model of e-commerce adopted. The Policy defines the following two models:

- a. *Inventory-based model*, where the inventory of goods and services is owned by the e-commerce entity and is sold to users directly. FDI is not permitted in the inventory-based model.
- b. *Marketplace-based model*, where the e-commerce entity provides a digital platform facilitating transactions between buyers and sellers. FDI up to 100% under the automatic route, i.e without Government approval, is permitted in the marketplace model.

Gated and open NFT marketplaces, such as OpenSea and Rarible, appear to follow the marketplace-based model as they do not exercise ownership or control over the NFTs exchanged on their platform, which usually belong to and remain in the custody of their creators. These

ix An e-commerce entity must either be a company incorporated in India, a foreign company covered under section 2(42) of the Companies Act, 2013 or an office, branch or agency (defined in s. 2(v)(iii) FEMA) in India controlled by a person outside India.

exchanges can therefore raise foreign capital without any limits. Proprietary marketplaces on the other hand, like NBA Top Shot and Rario, create NFTs themselves and sell them directly to users. Proprietary marketplaces seem to follow the inventory-based model of e-commerce, in which FDI is not permitted.

Additionally, a marketplace offering fractionalised NFTs, which are like securities, would be covered by the “*infrastructure company in the securities market*” section of the FDI Policy. This sector is allowed up to 49% FDI under the automatic route. F-NFT marketplaces will also need to comply with requirements under the Securities Contracts (Regulation) (Stock Exchanges and Clearing Corporations) Regulations 2012 and the Securities and Exchange Board of India (Depositories and Participants) Regulations 1996, as well as other guidelines and regulations issued by the Government, RBI and SEBI. They will also need to apply for recognition as a “recognised stock exchange” from the Government under Section 4 of the Securities Contracts Regulation Act.

Hence, entrepreneurs and developers looking to set up NFT exchanges must carefully consider the implications of their platform structure and the nature of NFTs they offer on their ability to raise capital from foreign sources. The Government may also provide clarity to stakeholders by including NFT marketplaces within the ambit of the ‘marketplace model’ of e-commerce, since most NFT marketplaces exercise little to no

control over the underlying asset and merely act as a platform to facilitate its purchase and sale. Beyond providing the necessary clarity, such a move would also boost capital flows into India, further augmenting the post-pandemic recovery. Experts suggest that greater regulatory certainty could unlock up to \$400 million of risk capital for the blockchain and VDAs sector in India.³²

Taxing NFTs

The NFT market has seen a marked increase in revenue flows in the past four years. NFT creators and exchanges witnessing windfall gains will be required to pay tax on income received and the NFT related services they provide. However, it is a complex task to assess the nature and amount of taxes payable by NFT artists, investors and marketplaces. This complexity arises from two primary reasons:

1. The Nature of Virtual Digital Assets

Virtual digital assets are notoriously volatile. Their valuation can fluctuate significantly in just a few hours. This is true of NFTs as well. As the chart below shows, the sale price of the average NFT has fluctuated between \$1500 and \$7000 over the past three months, with frequent peaks and troughs.

The extreme price volatility of cryptocurrencies and NFTs makes their valuation for tax purposes

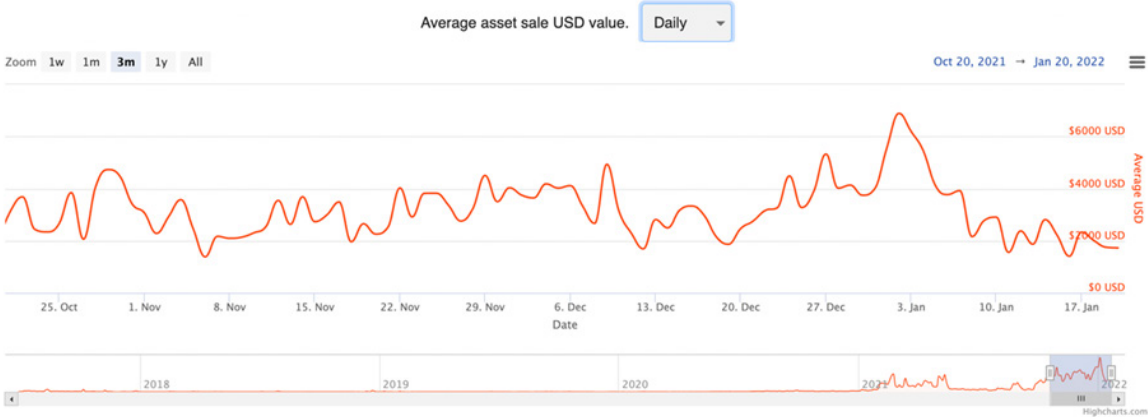


Chart 2: Average purchase value of NFTs since October 2021 (Source: NonFunigble.com)

a complex task. Additionally, prices might not be tracked with the required precision and different marketplaces may record different prices in the same period. Further complications arise as there is no single conversion rate for turning cryptocurrencies, which are used to purchase NFTs, into fiat, which is the basis for calculating taxes due.³³

Further, as described above it is difficult to determine the location of an NFT, especially on non-custodial exchanges. This makes it challenging to assess whether an NFT has been transferred across state borders (to assess Goods and Services Tax) or national borders (to assess customs duties).

2. Absence of clear guidance on how NFTs fit into existing taxation

Despite the large investments made in NFTs and fungible VDAs, Indian regulatory authorities offer little guidance on how Goods and Services Tax and the equalisation levy will apply to NFTs. Some key issues under these tax regimes are highlighted below:

Income Tax: The Finance Bill, 2022 has clarified the treatment of VDAs, including NFTs, under the Income Tax Act.³⁴ VDAs are classified as “property” under section 56 of the Act. The Bill proposes the imposition of a 30% flat tax on income accruing to individuals due to the transfer of VDAs. Hence, profits made due to the transfer of an NFT would be taxable at 30%. Furthermore, the section states that no deduction in respect of any expenditure, barring the cost of acquisition, will be allowed. It is currently clear whether minting and gas fees, which are paid when an NFT is created or transferred, can be deducted.

Additionally, as per section 194S tax will have to be deducted at source for payments made to Indian residents as consideration for the transfer of a virtual asset, provided such sum crosses threshold values fixed by the Government. The threshold value for TDS depends on whether the payee is a “specified person”. A specified person is defined as:

- a. an individual or Hindu Undivided Family (HUF) whose total sales, gross receipts or turnover does not exceed INR 1 crore in case of business income or INR 50 lakh in case of professional income during the previous financial year
- b. an individual or HUF with no income under the head “Profits and Gains of business or profession” during the previous financial year.

Where the payer is a “specified person” as described above, the cumulative threshold value is INR 50,000 for a financial year. Where the payer is not a specified person, the cumulative threshold value is INR 10,000 for a financial year.

This means that individuals buying NFTs will have to deduct 1% of the sum of a transaction as TDS at the time of payment or credit to the recipient’s account. This provision could lead to practical challenges for NFT buyers and marketplaces. For instance, where NFTs are exchanged on decentralised/peer-to-peer marketplaces, neither the marketplace nor the buyer know the location of the NFT’s seller. Determining whether the seller is an Indian resident is, hence, fraught with complications. It could also create complications for non-custodial/decentralised marketplaces that exercise no control over the monetary amounts underlying transactions on their platform but may still be required to deduct TDS. While the Finance Bill has provided some clarity on the tax treatment of NFTs and other digital assets, guidelines from the Central Government, as contemplated under section 194S (6), would help resolve the practical challenges identified above and facilitate tax payment by NFT creators, investors and marketplaces.

Goods and Services Tax: Section 9 of the Central GST Act imposes tax on the supply of goods and services. As NFTs can be treated as digital goods, their sale by creators and marketplaces in the course of business will attract GST. However, the tax head under which an NFT should be classified is a subject of debate. The existing literature suggests that the applicable tax rate will depend on the nature of the asset underlying the NFT.³⁵

For instance, when an art NFT is sold the GST would be applicable at the rate of 12%. Yet other experts argue that since the underlying asset is not transferred when an NFT is traded, it should be taxed at the residual rate of 18%.³⁶ Clarity on the GST rate applicable to NFTs will help marketplaces and creators collect and pay their share of taxes.

Equalisation Levy The Finance Act 2020 introduced an equalisation levy on the supply of services by e-commerce platforms. As per Section 165A, e-commerce platforms without a permanent establishment in India are required to pay a 2% levy on considerations received for the sale of goods and services.³⁷ This provision could conceivably extend to NFT marketplaces, which provide a service in facilitating the purchase and sale of NFTs, even if the marketplace exercises no control over the actual transaction. In considering the extension of EL to NFT marketplaces, policymakers should be cognisant of India's commitments under the OECD's two-pillar global tax reform plan, which requires member states to do away with unilateral digital taxes, such as the equalisation levy.³⁸

Ambiguity in interpreting these provisions will likely lead to disputes between tax authorities, creators and exchanges regarding the quantum of taxes due. A leading Indian cryptocurrency exchange was recently charged with tax evasion for failing to pay GST on a particular sort of transaction on its platform. Yet representatives of the exchange insist that they have regularly paid taxes, and that the dispute stems from ambiguity over the interpretation of certain provisions.³⁹

CONSULTATION AND ENGAGEMENT WOULD STREAMLINE THE PAYMENT OF TAXES FOR STAKEHOLDERS WHILE ALSO ENSURING GREATER REVENUE FLOWS FOR THE GOVERNMENT.

A similar situation for NFTs can be avoided by enabling continued stakeholder engagement between tax authorities, exchanges and creators to bring greater clarity on how NFTs will be classified for tax purposes. Consultation and engagement would streamline the payment of

taxes for stakeholders while also ensuring greater revenue flows for the Government. Clarity on the tax treatment of NFTs will also emerge once the OECD and other global financial institutions publish proposals for effective reporting and information exchange on VDAs.

Consumer Protection

Over the last few years the Government has created a robust consumer protection mechanism for goods and services sold digitally. The Consumer Protection Act 2019 (COPRA) and the Consumer Protection (E-Commerce) Rules 2020 seek to protect the interests of consumers who are increasingly turning to e-commerce to purchase goods and services.

As per Rule 2(1)(a), the Consumer Protection (E-Commerce) Rules are applicable to “*all goods and services bought or sold over digital or electronic network including digital products*”.⁴⁰ Section 2(21) of COPRA defines “goods” as every kind of movable property.⁴¹ As discussed above, NFTs fit the criteria of intangible goods and would therefore be covered by the Act and concomitant Rules.

Being covered by COPRA gives rise to interesting implications for NFT marketplaces. For instance the Act seeks to prevent unfair trade practices, including refusal to provide a refund for goods returned within the period specified on the bill, or 30 days if no period is specified. Selling goods without a bill or memo is also considered an unfair trade practice. Given the decentralised and non-custodial nature of several leading NFT marketplaces, it may prove challenging to implement mechanisms to facilitate returns and refunds for NFTs. Similarly, NFT marketplaces may fall foul of the provisions relating to product liability if they fail to provide adequate information, warnings and instructions for the products listed on their platform. Failure to comply with the provisions of COPRA could see cases being filed before the Central Consumer Protection Authority or other consumer grievance redressal commissions, which may not have the requisite technical understanding to properly address cases where NFTs are involved.

Under the E-Commerce Rules, NFT marketplaces, which function as e-commerce entities, will need to institute several mechanisms to protect consumer interest. For instance under Rule 4 of the 2020 Rules, e-commerce entities (both inventory-based and marketplace) must institutionalise a grievance redressal mechanism, publish information on the sellers/suppliers using their platforms, effect repayments and refunds according to RBI regulations, comply with due diligence requirements under the IT Act and IL Guidelines, refrain from unfair trade practices and price manipulation, and ensure accuracy of information made available by the e-commerce entity.

Rule 5 requires every marketplace e-commerce entity through the sellers to ensure that descriptions, images, and other content pertaining

to goods or services on their platform is accurate and corresponds directly with the appearance, nature, quality, purpose and other general features of such good or service. Under Rule 7, inventory e-commerce entities are to refrain from making misleading claims, advertisements or posting fake reviews regarding their products.

While these requirements are in the consumer interest, NFT marketplaces may find them difficult to implement as they seek minimal information for user and seller registration. To mitigate consumer protection concerns, NFT marketplaces should consider robust mechanisms to verify the identity and credentials of sellers listed on their platform. Consumers should be enabled at the pre-purchase stage to understand whom they are purchasing NFTs from and what avenues they have for redress.

CONCLUSION

This primer provides an overview of the technology behind NFTs and highlights the consequent legal and regulatory concerns. As such it can help initiate dialogue on the role that NFTs can play in harnessing India's potential for innovation and creativity.

Through sustained dialogue and stakeholder engagement on these issues, India has the chance to create a permissive regulatory framework for NFTs that enables innovation while protecting consumer interests. This would give India a unique position in international fora, and considerable leeway in future discussions on the regulation of NFTs.

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