

## Beyond Traditional Intellectual Property: Rise of Non-Fungible Tokens (NFTs) and Role of Blockchain in Protecting Digital Art

Prachi Mishra,<sup>1</sup> Ashish Kumar Singhal<sup>2</sup>, Virendra Singh Thakur<sup>1,3†</sup>, Dilip Sharma<sup>4</sup> and Mishika Bedi<sup>3</sup>

<sup>1</sup>University of Petroleum and Energy Studies, Dehradun — 248 007, India

<sup>2</sup>ICFAI Law School, The ICFAI University, Dehradun — 248 011, India

<sup>3</sup>Symbiosis Law School, Pune, Symbiosis International (Deemed University), Pune — 411 014, India

<sup>4</sup>ICFAI Law School, ICFAI Foundation for Higher Education (IFHE), Hyderabad — 500 029, India

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Non-Fungible Tokens (NFTs) have introduced novel mechanisms to authenticate and trade digital art, fostering a vibrant and dynamic marketplace by leveraging blockchain technology. However, the rise of NFTs has also prompted a host of legal and ethical considerations that necessitate careful scrutiny. This research paper provides an in-depth exploration of Non-Fungible Tokens (NFTs) as an emerging form of intellectual property that is transforming the digital art landscape. The paper begins by elucidating the principles behind NFTs and their significance to digital art, elucidating how these tokens redefine traditional notions of ownership. It scrutinizes the role of blockchain technology in protecting digital art and the distinctive advantages it provides, such as transparency and immutability. The paper then delves into the critical legal implications, particularly focusing on copyright issues and the evolving regulatory environment, highlighting the dichotomy between the ownership of NFTs and the copyright of the underlying digital artwork. It conducts a comparative legislative analysis of India, the USA, and the UK, indicating the urgent need for regulatory frameworks that can navigate the global and decentralized nature of NFT transactions.

The paper engages with ethical concerns, including environmental impact, economic inequality, and artist attribution, underscoring the necessity for balancing innovation with responsibility. Finally, it provides recommendations for regulatory approaches and discusses future implications, emphasizing the need for clarity, balance, and international cooperation in legislation, alongside the importance of continuous dialogue and research. This paper lays the groundwork for further investigations into the fast-evolving world of NFTs and their wider societal impacts.

**Keywords:** Non-Fungible Tokens (NFTs), Blockchain Technology, Intellectual Property, Digital Art

In the rapidly digitizing world, intellectual property rights (IPR) have become increasingly critical. Throughout history, communities have recognised the inherent value in the process of invention and innovation, providing protection for creators and innovators through various types of intellectual property (IPR).<sup>1</sup> Traditional means of intellectual property protection, such as copyright, patents, and trademarks, have given creators and inventors legal rights to their creations and innovations. These rights are critical in creating an environment that fosters creativity and invention, allowing artists to reap the benefits of their efforts.

The value of intellectual property has expanded enormously in the modern period. The emergence of the digital age has increased the demand for strong and enforceable intellectual property protections. Artists, singers, software engineers,

authors, and designers are among the many types of creators who now create their own intellectual assets. With a rise in content comes an increased demand for efficient and effective digital asset security. However, the development of digital technology has created new obstacles.<sup>2</sup> Enforcing intellectual property rights is relatively simple in the physical world, since works of art and invention are frequently unique and tangible. In contrast, the digital world is distinguished by its replicability, with digital files capable of being copied, transferred, and disseminated an endless number of times without loss of quality.<sup>3</sup> This feature has fundamentally challenged traditional concepts of intellectual property rights, making it increasingly difficult to secure and enforce these rights in the digital domain.

Traditional IPR systems were not created with the digital world in mind. As a result, these institutions have struggled to adapt and safeguard digital artists

<sup>†</sup>Corresponding author: Email: virendrathakur1909@gmail.com

adequately. Copyright laws, for example, frequently necessitate legal battles to enforce, necessitating enormous resources. Even so, due to the global nature of the internet and varied laws between nations, successful enforcement is not guaranteed. This changing landscape has paved the door for new digital art protection solutions and methodologies. The advent of non-fungible tokens (NFTs) is an especially intriguing development. An NFT is a sort of digital asset that uses blockchain technology to indicate ownership or evidence of authenticity of a unique object or piece of content.<sup>4</sup> NFTs are distinct from cryptocurrencies such as Bitcoin or Ethereum, which are fungible and may be exchanged on a like-for-like basis. Each token is distinct from the others, with unique properties that indicate ownership of a specific item.<sup>5</sup> NFTs have risen in popularity, particularly in the area of digital art. They provide a revolutionary method of verifying ownership and validity, which have traditionally been difficult to demonstrate in the digital age. Furthermore, NFTs give a means for making digital assets scarce, which runs counter to digital files' inherent replicability. In essence, NFTs could overcome many of the issues that plague digital art preservation by giving a verifiable claim to ownership that is built in the digital piece itself. This advancement has the potential to change the way we think about digital art, its worth, and its preservation.

This researchwork investigates the rise of non-fungible tokens (NFTs) as a novel approach of protecting digital art, as well as the significance of blockchain technology in this evolving paradigm. Also, exploring ways in which NFTs and blockchain can overcome the constraints of traditional intellectual property protections, exploring case studies of successful NFT implementations, and address the legal and ethical implications of this technology. This research is critical in light of the ongoing digital transition. Its goal is to give a comprehensive understanding of NFTs, to contribute to the discussion about IP protection in the digital world, and to stimulate debate about how to effectively safeguard the rights of digital producers. Understanding the potential of NFTs and their impact on digital art is crucial for artists, legislators, lawyers, and the general public. Policymakers must understand the mechanics of NFTs in order to create suitable rules, and legal experts must comprehend the complexities of digital art protection in order to effectively represent their clients. Furthermore, as consumers of digital art, the general public must be aware of the rights associated with their purchases, as well as the methods by which artists and creators are compensated for their work.

A better understanding of NFTs also opens the door to a broader discussion on the worth of digital assets. Because of the ease of duplication, digital content has long been underestimated. However, NFTs provide scarcity and distinctiveness to digital objects, leading us to reconsider their value. It is time for society to reconsider how we perceive and value digital creations, and the role of NFTs in this process is critical.

Furthermore, the introduction of NFTs has aroused interest in blockchain technology's possibilities beyond cryptocurrencies. The decentralised, transparent, and immutable nature of blockchain lends itself to a wide range of applications, and NFTs are just the start. Significant insights can be obtained by looking into how blockchain technology might be used in the future by examining the rise and deployment of NFTs. While NFTs and blockchain have received much attention, there is a huge void in the scientific literature discussing their implications for intellectual property protection. The growth of intellectual property protection in the digital era is a fascinating subject, providing insights into the convergence of law, technology, and art. The importance of protecting digital creations will only rise as the world continues to digitise. This study intends to shed light on the potential of NFTs in this context, with the hope of contributing to the discourse and catalysing additional research into this new area.

### **Traditional Intellectual Property Rights (IPR) and their Limitations in the Digital Era**

Intellectual property rights (IPR) comprise the legal rights that result from intellectual activity in the industrial, scientific, literary, and artistic fields.<sup>6</sup> Throughout history, society have recognised the value of supporting innovation and creativity. As a result, legal mechanisms have been put in place to give creators and inventors exclusive rights to their ideas and innovations.

Traditional types of intellectual property include copyright, patents, and trademarks, each with its own scope and function. Copyright safeguards the expression of an idea, such as a book, music, or piece of artwork. Patents safeguard inventions and novel processes by allowing the creator exclusive rights to use or sell the invention for a set period of time. Trademarks, on the other hand, protect the names, symbols, or designs associated with a brand, allowing consumers to determine the origin of a product or service.

These legislative safeguards have been critical in promoting creativity and innovation. IPR provides a significant incentive for continuing creation and innovation by ensuring that creators and inventors may reap the advantages of their efforts.

#### **Understanding Traditional IPR**

The concept of intellectual property rights (IPR) is firmly ingrained in many civilizations, with roots dating back to prehistoric times.<sup>7</sup> The ancient Greeks, for example, awarded chefs exclusive rights to profit from their unique cuisine. The importance of IPR has only grown in the modern era, with laws constantly altering to adapt to the ever-changing landscape of production and discovery.

Copyright Law has been critical in safeguarding intellectual property in the arts. Copyrights offer authors the exclusive right to reproduce, distribute, and display their works, including books, music, paintings, and films.<sup>8</sup> This exclusivity is crucial in allowing authors to commercialise their work, whether through duplicate sales, licencing, or other means.

Patent Law, on the other hand, has played an important role in propelling technical innovation. Patent Law incentivizes inventors to invest time, energy, and money into developing new and valuable products, processes, and technologies by granting them exclusive rights to their discoveries for a specified duration of time (20 years).<sup>9</sup>

Finally, Trademark Law protects brands and their reputations. Trademark Law ensures that consumers can recognise and distinguish between different products and services in the marketplace by allowing companies to register their brand names, logos, and other unique marks.<sup>10</sup>

#### **Evolution of IPR in the Digital Age**

The nature of innovation and invention has altered dramatically with the beginning of the digital age. Many creators and inventors today work in the digital arena, producing digital art, software, apps, and other digital products. As a result, existing IPR systems have had to adapt to this new terrain.

In the 1980s, for example, in reaction to the expansion of software development, the US Copyright Office began to authorise the registration of software as literary works.<sup>11</sup> Similarly, as online businesses have grown in popularity, the concept of trademark has evolved to incorporate domain names and social media handles. These modifications represent efforts to harmonise traditional intellectual property rights

with the changing reality of the digital age. While these changes have offered some protection for digital producers, they have also revealed the limitations of traditional IPR in the face of new digital technology.

#### **Limitations of IPR in Protecting Digital Art**

The emergence of digital technology has posed various new obstacles to the enforcement of intellectual property rights. The intrinsic replicability of digital content is perhaps the most significant of these difficulties.

Digital files can be copied, transferred, and distributed an endless number of times without losing quality in the digital world.<sup>12</sup> This feature profoundly challenges the notion of exclusivity, which is the foundation of traditional IPR. For example, whereas a physical painting can only exist in one spot at a time, a digital artwork can be exactly replicated with a few clicks, making it available simultaneously in multiple locations around the world. Because of the ease of replication and distribution, it is extremely difficult for artists to control and enforce their copyright rights.

Furthermore, the global nature of the internet adds another layer of complication to IPR enforcement. Jurisdictional difficulties develop as digital content is viewed and exchanged across boundaries. Copyright rules differ from country to country, making global enforcement problematic. Due to variances in national regulations, a piece of digital art with copyright protection in one place may be freely shareable in another. This condition frequently renders artists unable to properly assert their rights, as finding and pursuing each case of infringement across multiple jurisdictions is very impossible.

Furthermore, traditional IPR does not adequately handle the issue of proof of original production in the digital environment.<sup>13</sup> An original item of physical art can frequently be authenticated by physical examination or provenance investigation. However, in the digital age, where exact reproductions can be easily generated, determining the original creation is considerably more difficult. While metadata can give information on the creation and change of digital files, it is easily modified or removed.

In addition, traditional intellectual property rights (IPR) do not provide an effective mechanism for artists to demonstrate ownership of digital compositions. Once a digital file is published online, tracing it back to its original creator becomes extremely hard, especially if it has been shared and

reproduced several times.<sup>14</sup> While watermarking and digital rights management (DRM) technologies provide some protection, they are frequently circumvented or eliminated.

Lastly, many digital producers find the procedure of registering and enforcing IPR to be intimidating. Copyright or trademark registration frequently requires intricate legal processes and potentially large costs, which can be prohibitive for individual artists or small enterprises. Enforcing these rights can be much more difficult, frequently necessitating lengthy and costly judicial battles.

These difficulties highlight the limitations of traditional IPR in the digital age and the need for innovative solutions. With the rapid expansion of digital creativity and the growing value of digital assets, current IP protection solutions must adapt and evolve.

The development of non-fungible tokens (NFTs) offers a possible solution to these issues. NFTs provide a novel means of establishing the validity and ownership of digital assets by using the power of blockchain technology, which has the potential to revolutionise the way we protect digital art.<sup>15</sup>

### **Non-Fungible Tokens (NFTs): Characteristics, Technology and Potential for Protecting Digital Art**

Non-fungible tokens (NFTs) have emerged as a game-changing solution to many of the issues confronting intellectual property rights (IPR) in the digital era. An NFT is essentially a sort of digital asset that demonstrates ownership or proof of authenticity of a one-of-a-kind object or piece of content.<sup>16</sup> Unlike fungible cryptocurrencies like Bitcoin or Ethereum, which may be swapped on a like-for-like basis, NFTs are unique and non-interchangeable. Each token has unique qualities and metadata that link it to a specific item and distinguishes it from other tokens.

Non-fungibility is not a new concept. Many items in the physical world are non-fungible. A Picasso painting, for example, is non-fungible since there is only one original. Even if a copy of the painting were made, it would not be the same as the original. This concept of uniqueness and non-fungibility is brought to the digital world by NFTs. Due to their uniqueness, NFTs are ideal for reflecting ownership of unique digital goods such as digital art, music, virtual real estate, and more. An individual can acquire ownership rights to a unique piece of digital content by purchasing an NFT. Because this ownership is

validated and stored on the blockchain, it is transparent, immutable, and free of conflicts.<sup>17</sup>

### **Role of Blockchain Technology**

Blockchain technology is at the heart of NFTs. A blockchain is a decentralised, distributed ledger that records transactions across numerous computers in such a way that they cannot be changed retrospectively.<sup>18</sup> This technology enables the secure and transparent recording of information, making it suitable for confirming and recording digital asset ownership. Most NFTs are part of the Ethereum network, which supports these tokens via an ERC-721 standard.<sup>19</sup> This standard enables the generation of tokens with distinct features that render them non-fungible. Other blockchains, such as Binance Smart Chain and Flow, have begun to enable NFTs.<sup>20</sup>

When an NFT is formed, or "minted," metadata about the digital asset is incorporated into the token, such as the creator's identity, the date of creation, and other pertinent data. This data is recorded on the blockchain, where it is public and immutable. As a result, the digital asset's ownership and legitimacy may be unequivocally established.

### **NFTs and Digital Art: A New Paradigm for Protection**

The emergence of NFTs has serious consequences for digital art protection. NFTs transcend many of the constraints of traditional IPR by giving a means to establish ownership and authenticity.

Firstly, NFTs handle the issue of replication. The digital file linked with an NFT can still be copied, but the NFT itself cannot.<sup>21</sup> This one-of-a-kind nature brings the concept of originality to the digital world. There can only be one owner of a certain NFT, just as there can only be one original Picasso picture. This gives digital assets a level of rarity that was previously unattainable.

Secondly, NFTs offer a practical answer to the problem of demonstrating ownership. When you buy an NFT, the transaction is recorded on the blockchain, resulting in a transparent and immutable record of ownership. This document is easily verifiable, which eliminates ownership issues.

Lastly, NFTs handle the issue of proof of original production. The metadata encoded in an NFT can contain information about the creator, providing incontrovertible proof of the artist's identity and the origin of the work. This capability is especially useful

in the digital environment, where pinpointing the provenance of a work can be difficult.

Furthermore, NFTs provide a new avenue for artists to monetise their work. The artist is compensated when an NFT connected with a digital artwork is sold. Furthermore, smart contracts, which are programmable contracts on the blockchain, can be set up to pay royalties to artists each time the NFT is resold. This feature differs significantly from traditional art markets, where artists often do not profit from the sales of their work. NFTs can aid in the process of enforcing IPR. Traditional methods of enforcement, such as litigation, can be costly and time-consuming. NFTs, on the other hand, provide visible and easily verifiable proof of ownership and validity, potentially minimising the need for legal action. While this does not preclude infringement, it does enable a new and more efficient method of monitoring and enforcing rights.

### **Case Studies of NFTs in Digital Art**

The potential of NFTs in protecting digital art is not merely theoretical. Over the past few years, numerous artists and creators have leveraged NFTs to protect and monetize their work. The case studies illustrate the practical implementation and effectiveness of NFTs.

#### **Beeple and "Everydays: The First 5000 Days"**

A digital artwork named "Everydays: The First 5000 Days" by the artist Beeple (actual name Mike Winkelmann) was sold as an NFT for a whopping \$69 million at Christie's auction house in March 2021. This auction sale, one of the highest ever for an artwork, demonstrated the potential of NFTs in the art industry. Beeple's artwork, a mosaic of pictures generated over 5000 days, was minted as an NFT on the Ethereum blockchain, offering unmistakable proof of authenticity and ownership.<sup>22</sup>

#### **Grimes and "War Nymph Collection Vol. 1"**

Grimes (actual name Claire Boucher) auctioned a collection of digital artworks as NFTs in February 2021, collecting over \$6 million. The paintings, which were part of her "WarNymph Collection Vol.1," were auctioned on the NFT marketplace Nifty Gateway. The collection, which featured some original music, represented a new manner of distributing and monetizing music and art. The auction demonstrated how NFTs may be used to not only safeguard digital art but also to generate new financial models for artists.<sup>23</sup>

#### **Cryptopunks**

Cryptopunks, founded by software developers Matt Hall and John Watkinson, was one of the original NFT ventures on the Ethereum blockchain and has been significant in shaping the present NFT field. Cryptopunks is made up of 10,000 randomly generated characters. There are no two identical characters, and each one is held by a person who acquired the associated NFT. Each Cryptopunk has their own distinct qualities, such as distinctive hairstyles, accessories, and facial expressions, and they've become cult favourites among the crypto community. One of the Cryptopunks (#7804) was sold in February 2021 for 4200 Ether, which was roughly \$7.6 million at the time of the sale, indicating the future value of digital artworks represented as NFTs.<sup>24</sup>

#### **NBA Top Shot**

NBA Top Shot, a model developed by Dapper Labs (the team behind CryptoKitties), is an online platform where users can collect, trade, and possess officially licenced NBA collectible highlights. These highlights, or "moments," are tokenized as NFTs on the Flow blockchain. Each moment depicts a distinct play from an NBA game and is made in limited quantities, giving them a one-of-a-kind value. NBA Top Shot has amassed a sizable user following and produced millions of dollars in sales since its initial release. A LeBron James dunk sold for \$208,000, indicating a strong desire in sports-themed digital art and collectibles.<sup>25</sup>

#### **Kings of Leon's 'When You See Yourself' Album**

The American rock band Kings of Leon published their album 'When You See Yourself' as a NFT in a first for the music business. This was the first time a music album has been issued in this format. The NFT version of the record includes exclusive album artwork as well as a 'golden ticket' that granted the holder four front-row seats to any Kings of Leon concert throughout the tour. This novel application of NFTs demonstrates the possibility for tokenizing not only visual art but also music and other forms of creative content.<sup>26</sup>

#### **'The Merge' by Pak**

Pak, an enigmatic and anonymous digital artist, sold a series of works as NFTs at the Sotheby's auction "The Merge." The sale, which took place in December 2021, included digital photographs, animations, and an "open edition" artwork in which people may pay a variable

amount of money to possess a portion of the artwork. The auction raised nearly \$91 million, cementing NFTs' place in the traditional art world.<sup>27</sup>

These case studies demonstrate NFTs' potential to alter the art industry. NFTs represent a paradigm shift in how we perceive and value digital works by allowing them to be authenticated, protected, and monetized.

### **Limitations and Criticisms of NFTs**

While NFTs have considerable potential for protecting digital art, they do have limitations and drawbacks. Some opponents believe that the creation and transaction of NFTs use a lot of energy, which adds to environmental problems. Others have pointed out that the present euphoria around NFTs has resulted in speculative behaviour, with prices reaching unsustainable levels. Concerns have also been expressed concerning the possibility of fraud and misuse of NFTs, particularly when artworks are tokenized without the artist's agreement.

Despite these objections, there is no doubting that NFTs have transformative potential. As with any new technology, there will be hurdles and issues to overcome. However, this should not be allowed to overshadow the tremendous advantages that NFTs bring to the table. The aim is to develop a balanced framework that maximises the benefits of NFTs while minimising potential drawbacks.

### **Legal and Ethical Considerations in the Context of Non-Fungible Tokens (NFTs) and Blockchain**

The swift rise of NFTs and blockchain technology has introduced novel and complex legal and ethical considerations. This uncharted territory presents unique challenges to established legal frameworks and ethical standards, calling for a more detailed exploration.

#### **Copyright and Intellectual Property Issues**

Copyright and intellectual property (IP) rights support the creative industries by ensuring the connection between creators and their creations. However, the introduction of NFTs complicates these well-established legal frameworks.

#### **Ownership and Rights**

In general, purchasing an NFT does not imply acquiring the rights on the linked artwork. This notion is consistent with established copyright statutes around the world, such as the United States Copyright Act (17 U.S.C. 101 et seq.) and the United Kingdom's Copyright, Designs and Patents Act 1988, both of

which prohibit the transfer of copyright without clear documentation.<sup>28</sup> Instead, NFT purchasers obtain a digital ownership certificate for a specific copy of the work rather than the underlying IP rights. However, in the absence of explicit provisions defining the exact scope of rights covered by the NFT, uncertainty may occur, potentially leading to unintended copyright infringements.

#### **Infringement and Enforcement**

Due to the simplicity of minting NFTs, artworks have been tokenized and sold without the approval of the original creator, resulting in copyright infringement. Given the decentralised, cross-jurisdictional nature of blockchain, dealing with these transgressions can be difficult. Traditional enforcement methods, such as those established in the United States' Digital Millennium Copyright Act (DMCA)<sup>29</sup> or the European Union's Directive on Copyright in the Digital Single Market,<sup>30</sup> may fail to adapt to the fundamentally transnational and pseudonymous nature of NFT transactions.

#### **Consumer Protection and Fraud**

Consumer protection laws are intended to protect consumers from unfair business practises. However, the NFT market's infancy has given rise to a number of consumer protection and fraud-related challenges.

#### **Misrepresentation and Scams**

The NFT industry is not immune to fraudulent practises, which range from misrepresented ownership to blatant scams. Others have stolen and tokenized artists' works, resulting in severe issues of misrepresentation. While legislation such as the United States' Federal Trade Commission Act<sup>31</sup> and the United Kingdom's Consumer Rights Act, 2015<sup>32</sup> protect consumers from misleading practises, enforcing them in the decentralised, global NFT economy presents considerable obstacles.

#### **Market Manipulation**

In the NFT area, the possibility of market manipulation, such as 'pump and dump' schemes, is considerable. Current financial regulations, such as the Securities Exchange Act of 1934 in the United States, are primarily concerned with securities and may not cover manipulative practises employing NFTs. Furthermore, the NFT market's global and decentralised character complicates the detection and prevention of market manipulation.

#### **Ethical and Environmental Concerns**

The energy consumption associated with NFTs and their underlying blockchain technology,

notably Proof of Work (PoW) blockchains such as Ethereum, is significant. This has sparked a heated debate concerning the carbon footprint of NFTs, posing a huge ethical quandary for both artists and collectors.<sup>33</sup>

NFTs have been praised for democratising access to the art market. High petrol prices and price volatility, on the other hand, can worsen economic inequality. Furthermore, wealth in the NFT space is frequently concentrated within a small number of holders, creating issues about equitable wealth allocation.

### **Comparative Legislative Analysis**

Navigating the complicated terrain of NFTs and blockchain necessitates knowledge of many legal systems. To help with this investigation, let's compare legislative systems in India, the United States (USA), and the United Kingdom (UK).

#### **India**

As June 2023, India does not have specific legislation governing NFTs. Nevertheless, various existing laws may potentially apply. The Indian Copyright Act, 1957<sup>34</sup> considers copyright in a work to be infringed when a person does anything that only the copyright owner has the exclusive right to do without the agreement of the copyright owner. This could apply to the unauthorised minting and sale of NFTs containing copyrighted material. However, the act does not specifically address the question of digital ownership related with NFTs.

The Consumer Protection Act of 2019 provides remedies for unfair commercial practises, which may apply to fraudulent NFT activities. However, the cross-border nature of NFT transactions may make implementation of these requirements more difficult.<sup>35</sup>

The regulatory environment for cryptocurrencies in India has been ambiguous and developing. While the Reserve Bank of India previously prohibited banks from interacting with crypto-related enterprises, the Supreme Court overruled this in 2020.<sup>36</sup> There is no particular law governing NFTs, which are often created on cryptocurrency platforms.

#### **United States**

In the USA, a variety of existing laws can be seen to govern NFTs, albeit indirectly. According to the United States Copyright Act, copyright infringement occurs when any of the copyright owner's exclusive rights are violated.<sup>37</sup> NFTs may be considered

derivative works, and unauthorised creation and sale of NFTs may be considered infringement. This, however, has yet to be proven in court.

The Federal Trade Commission Act outlaws misleading practises, which may apply to fraudulent NFT activities.<sup>38</sup> However, like with India, the worldwide nature of NFT transactions can make enforcement more difficult.

The Securities and Exchange Commission (SEC) of the United States has not issued any guidelines on NFTs. NFTs, depending on their qualities, may be categorised as securities and hence subject to securities law.

#### **United Kingdom**

In the UK, as in India and the USA, existing laws can be applied to NFTs, although the application is not always straightforward. Copyright infringement happens when a person does an act intended for the copyright owner without their consent, according to the Copyright, Designs, and Patents Act of 1988.<sup>39</sup> This might potentially apply to the creation and sale of unauthorised NFTs. However, the Act does not specifically address digital ownership issues related with NFTs.

The Consumer Rights Act of 2015 and other associated rules protect consumers from unfair business practises.<sup>40</sup> These may apply to fraudulent NFT activities, albeit international enforcement can be difficult.

There is no explicit rule governing NFTs in the UK. However, depending on their characteristics, NFTs may be subject to existing financial laws.

While current regulation in India, the United States, and the United Kingdom may be applicable to NFTs, the unique properties of NFTs and blockchain technology pose major hurdles. As a result, new legislative and regulatory methods are clearly required to efficiently control this expanding area.

#### ***Legal Uncertainties and Regulatory Approaches***

Navigating the NFT landscape requires a grasp of the legal issues that continue in several jurisdictions, including India, the United States, and the United Kingdom, as well as the potential legislative initiatives that can address these uncertainties.

#### ***Jurisdiction and Applicability***

As our comparative research suggests, each country has its own set of regulations and legislation that may or may not apply to NFTs. However, it is not

always apparent which jurisdiction's laws apply to a particular NFT transaction. This is owing to the internet's worldwide reach and the decentralisation inherent in blockchain technology, which enables NFT transactions to take place between parties situated anywhere in the world.

#### ***Classification and Regulation of NFTs***

There is no clear consensus on the legal classification of NFTs in any of the three jurisdictions. In the United States, for example, the Securities and Exchange Commission (SEC) has not issued final guidelines on whether NFTs can be classed as securities. Similarly, there are no formal legislation governing NFTs in India or the United Kingdom, leading to uncertainty regarding how existing laws apply.

#### ***Enforcement and Consumer Protection***

While each nation has consumer protection laws, implementing these laws in the context of NFT transactions can be difficult due to the pseudonymous nature of blockchain and the cross-border nature of many NFT transactions. The legal ambiguity surrounding NFTs necessitates the development of novel regulatory procedures. While each jurisdiction may design its own legislation, a number of shared concepts may serve as a guide for these efforts.

#### ***Clarity and Specificity***

Regulations should offer clarity and detail on crucial topics such as the legal classification of NFTs and the rights conferred by holding an NFT. This would help to decrease uncertainty and provide a more safe legal environment for NFT transaction participants.

#### ***Balance***

Regulations must find a balance between protecting consumers and encouraging innovation. Excessive rules may impede the growth and potential of NFTs and blockchain technology, while lax regulations may expose customers to scams and fraud.

#### ***International Cooperation***

Since NFT transactions are global and decentralised, international cooperation will be crucial in devising successful regulatory measures. This could take the shape of international treaties or agreements, or it could take the form of harmonised regulatory frameworks.

The legal uncertainties surrounding NFTs and blockchain technology pose significant challenges,

but also provide an opportunity for regulators around the world to develop innovative regulatory approaches. As we move forward, the experiences and approaches of different jurisdictions, such as India, the USA, and the UK, can provide valuable insights into how best to regulate this emerging field.

The legal issues surrounding NFTs and blockchain technology provide substantial obstacles, but they also present an opportunity for regulators worldwide to adopt creative regulatory measures. Moving forward, the experiences and practises of other countries, such as India, the United States, and the United Kingdom, can provide useful insights into how to appropriately govern this burgeoning area.

As we near the end of this in-depth examination of Non-Fungible Tokens (NFTs) and their impact on intellectual property rights and digital art, we find ourselves in the midst of a remarkable transformation in our concept of value, ownership, and creativity. This research paper has navigated the new paths opened up by NFTs, investigated the underlying blockchain technology, and contended with the complex legal and ethical issues raised by these advances.

#### **Conclusion**

NFTs provide an innovative method of affirming authenticity and facilitating the transaction of digital art, opening up new prospects for artists and collectors. They provide a much-needed mechanism for recognising and rewarding the underlying innovation in digital works, effectively flipping the traditional intellectual property regime on its head.

They do, however, create complicated legal and ethical concerns that require careful study and response. Traditional laws in nations such as India, the United States, and the United Kingdom appear insufficiently equipped to deal with the particular features and challenges of NFTs. Consumer protection problems occur as a result of the blockchain's worldwide and often pseudonymous character, which makes regulation and enforcement of fraudulent practises challenging.

From an ethical perspective, concerns about the environmental impact of blockchain technology, the possibility for economic inequity, and the implications for artistic attribution necessitate careful consideration and action. As we move forward, these challenges must be addressed and balanced against the enormous potential that NFTs and blockchain technology provide.

To address questions of ownership and copyright in the context of NFTs, legislators and policymakers must offer clear definitions and legal principles. This clarification will assist artists, collectors, and investors in understanding their rights and duties as they navigate the NFT marketplace. Regulators should strengthen consumer protection measures in the NFT market. This could include more robust identity verification processes, more transparent information releases, and harsher penalties for fraudulent behaviour.

Policymakers must strike a balance between encouraging innovation and protecting consumers. Excessive regulation may hinder the promise of NFTs and blockchain technology, while lax regulation may expose consumers to risk. Since NFTs are global in nature, international collaboration is critical. This could include harmonising regulatory frameworks, sharing best practises, and working together on enforcement actions.

It is apparent that the emergence of NFTs and blockchain technology will continue to transform our perceptions of value, ownership, and innovation. NFTs may find new applications, increasing their reach beyond the realm of digital art. As blockchain technology progresses, it may provide solutions to some of today's problems, such as the environmental impact of blockchain activities.

The future of NFTs has ramifications for lawyers, policymakers, and educators. Legal practitioners will need to respond to these changes by learning about blockchain and NFTs and developing creative legal solutions. Policymakers will need to react to these changes by developing flexible and responsive regulatory frameworks. Meanwhile, educators will play a critical role in increasing public knowledge and comprehension of NFTs. As a result, NFTs represent an intriguing nexus of art, technology, law, and ethics. As we continue to explore this new terrain, it is critical that we do so with an open mind, prudence, and teamwork, ensuring that we capitalise on the benefits given by NFTs while minimising their dangers and challenges.

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