DIGITAL TRANSFER DOCTRINE THROUGH NFT: A STUDY

*Narendra Singh Shekhawat**

Abstract

Markets for unique digital assets- digital equivalent of rare collectible goods like Pokémon cards, wrestling cards or any such other goods which gain their value out of scarcity i.e., uniqueness and rivalrous-ness, have exploded in the past few years. At root is the next version of block chain technology called non-fungible token. Unlike with crypto-currency which are fungible in nature, Non-Fungible Tokens (NFTs) attribute its functionality through non-replica of any digital work that is uniqueness and originality which are pre-requisite for copyrightability of any work. NFTs have grown from a nascent level to dominative position and rapidly developing unique digital treasure. Unlike the existing legal norms for digital work which only transmits limited rights to the consumer through End-User License Agreement and Digital Right Management. The NFT technology is a major break-throw for legal recognition of digital work in the era of digitalization. Through this paper the author tried to highlight the process and proposes a clear path for the evolution of legal underpinning of NFT by integrating the technology upgradation to recognize first sale doctrine or digital transfer doctrine in digital work by resolving the ownership vs. licensee dichotomy and providing an insight to end the anti-trust regime in digital content market.

Keywords: *Blockchain, Digital Work, Contracts, Tokenization, Copyrightability*

1. Introduction

Unique digital assets are intangible goods and functions as any other property in a sense that it can be bought, sold, distributed, displayed, gifted and even terminated at the desire of the holder just like personal property. The significant development in the market of the unique digital assets have arisen because of the scarcity of such assets which is attributed to the distinctive and unique character. The fundamental of their uniqueness is rare artwork in digital form.

Rare and unique commodities were limited to the tangible world. People monetize from such commodities by trading in the unique and rare items like basketball cards, Pokémon cards, coins, stamps or even the unique and rare coca cola bottle caps. But, due to technology advancement through the next generation in the internet world *i.e.*, WEB 3.0 has bought the technological upgradation by introducing the blockchain technology for creating the unique digital assets by the process of minting and tokenization, which evolves the apparatus of digital collectible marketplace and assists to create and own the digital artifacts and monetize from them similarly to the tangible commodities. And all these derive their value from the scarcity of the resource with the unlimited wants concept of economics. Domain names, event tickets, in-game items, event handles on social networks like Twitter or Facebook, are all non-fungible digital assets; they just vary in their trade-ability, liquidity and interoperability. For instance, the National Basketball Association's (NBA) top shot, Major League Basketball (MLB), crypto kitties, online gaming in app purchases, bored ape yacht club created by the Yuga lab.[1]

On a conceptual level the technology acts as a sort of generic database to mediate the exchange of digital work. On a technical level, Non-Fungible Tokens (NFT) is just a token that has a unique serial number and cannot be subdivided into smaller parts; non-fungibility. Through this paper, the author tried to study and analyze the implication of blockchain technology for envisaging the first sale doctrine in the digital work, and decade long fallacy of ownership vs. licensee dichotomy and lastly upon the prevailing anti-trust regime in digital content by digital technology giants like amazon backed kindle.

2. Anatomy of NFT

The NFTs attribute its uniqueness and non-fungibility by the technology of blockchain and distributed public ledger to validate the transaction for perpetuity. Blockchain is a method of recording information that makes it impossible or difficult for the system to be changed, hacked, or manipulated. A blockchain is a distributed ledger

[1] Sasha Shilina, "A comprehensive study on Non-Fungible Tokens (NFTs): Use cases, ecosystem, benefits & challenges", *ResearchGate*, *available at*: https://www.researchgate.net/publication/361443799_A_comprehensive_study_on_Non-Fungible_Tokens_NFTs_Use_cases_ecosystem_benefits_challenges (last visited June 10, 2022).

that duplicates and distributes transactions across the network of computers participating in the blockchain. For example, in the case of cryptocurrency, there is an electronic coin as a chain of digital signatures.[2]

Each owner transfers the coin to the next by digitally signing a hash of the previous transaction and the public key of the next owner and adding these to the end of the coin. A group of transactions can be recorded in what is called a block. New blocks are created through a process of "mining" in which different computers compete to solve a complicated math problem, and the computer that wins is rewarded the block.[3] All of the transactions are recorded on that block and the block is closed and hashed, creating a unique identifying number.[4] That number forms the basis for the next math problem that the miners then try to solve. Each block in the chain is mathematically linked to the block right before and right after it. When a new block is added, it is hashed together with the previous block's hash.[5] Altering one block would mean that one have to alter every block that came before it.[6] The connections of the entire chain protects the blockchain from fraud and censorship.[7]

A payee can verify the signatures to verify the chain of ownership.[8] The elimination of a centralized authority (central bank) is done by the process of timestamp that particular transaction on a block; a timestamp server works by taking a hash of a block of items to be time stamped and widely publishing the hash, to implement a distributed timestamp server on a peer-to-peer basis (distributed crypto ledgers). Such peer-to-peer validation is done by decentralized public ledgers through nodes. The timestamp proves that the data must have existed at the time, obviously, in order to get

---

2 The Information Technology Act, 2000 (Act 21 of 2000), s. 2(p) & s. 3.

3 Bennett Garner, "Merkle Tree Hashing: How Blockchain Verification Works", *Coincentral* (Sept. 3, 2018), *available at*: https://coincentral.com/merkle-tree-hashing-blockchain.

4 Rebecca M. Bratspies, "Cryptocurrency and the Myth of the Trustless Transaction", 25 *Michigan Technology Law Review* 12-13 (2018).

5 *Supra* note 3.

6 *Supra* note 4 at 13.

7 Aaron Wright & Primavera De Filippi, "Decentralized Blockchain Technology and the Rise of Lex Cryptographia", *available at*: https://papers.ssrn.com/sol3/papers.cfm?abstractid=2580664 (last visited on June 15, 2022).

8 Satoshi Nakamoto, "Bitcoin: A Peer-to-Peer Electronic Cash System", *available at*: https://bitcoin.org/bitcoin.pdf (last visited on June 18, 2022).

into the hash. Each timestamp includes the previous timestamp in its hash, forming a chain, with each additional timestamp reinforcing the ones before it.

The proof-of-work also solves the problem of determining representation in majority decision making. If the majority were based on one-IP-address-one-vote, it could be subverted by anyone able to allocate many Internet Protocol (IPs). Proof-of-work is essentially one-CPU-one-vote. The majority decision is represented by the longest chain, which has the greatest proof-of-work effort invested in it. If a majority of CPU power is controlled by honest nodes, the honest chain will grow the fastest and outpace any competing chains.

To modify a past block, an attacker would have to redo the proof-of-work of the block and all blocks after it and then catch up with and surpass the work of the honest nodes. The article shall later show about the probability of a slower attacker catching up which diminishes exponentially as subsequent blocks are added. Nodes always consider the longest chain to be the correct one and will keep working on extending it. If two nodes broadcast different versions of the next block simultaneously, some nodes may receive one or the other first. In that case, they work on the first one they received, but save the other branch in case it becomes longer. The tie will be broken when the next proof-of-work is found and one branch becomes longer; the nodes that were working on the other branch will then switch to the longer one.[9]

Therefore, the three elements of the blockchain are the ledger, the network and the consensus. Firstly, the ledger is a public ledger which functions through decentralized authority whereby the sale is made of NFT and it records the transaction to be encrypted on the block with regards to ownership and the amount of transaction with ERC 721 and ERC 1155 standards of smart contract. The second and third one, namely, the network and the consensus is done through peer-to-peer verification method by the nodes and such validation of the said transaction is proof-of-work. The author intends to elaborate the same in depth in context of the non-fungible token in the further part of the paper.

The first element is the distributed ledger which is a blockchain system. Blockchains provide a coordination layer for digital assets, giving users ownership and management permission. Blockchains add several unique properties to non-fungible

[9] *Ibid.*

assets that change the user and developer relationships with these assets.[10] By representing non-fungible tokens on public blockchains, developers can build common, reusable, inheritable standards relevant to all non-fungible tokens. These include such basic primitives as ownership, transfer, and simple access control. Additional standards (specifications for how to display an NFT, for example) can be layered on top for rich display inside the applications. Standards are those parts which make non-fungible tokens powerful. They give developers the guarantee that assets will behave in a specific way and describe exactly how to interact with the basic functionality of the assets.

2.1. Minting of Digital Work:

"Minting" an NFT is the process of writing a digital item to the blockchain. This establishes its immutable record of authenticity and ownership. "Why can't one just screenshot an NFT?" The answer to this question is minting. When one mints an NFT, it becomes stored on the blockchain, where its authenticity and ownership is established and as the blockchain record cannot be edited, thus minting is the start of that NFTs immutable history.[11]

The minting process, from a high level, has the following steps that it goes through:

i. Creating a new block
ii. Validating information
iii. Recording information into the blockchain.[12]

2.1.1. Minting for creators:

As a creator, minting one's work allows him to establish provable scarcity, verified ownership and ongoing creator earnings. For the first time, creators can publish limited edition digital works, whose authenticity is validated on the blockchain. Ownership is undisputed and public, allowing creators to build special communities and perks for those who hold their NFTs. Creators can also set "creator fees" to earn on every secondary sale of their NFTs, and these fees are automatically programmed and executed

[10] Devin Finzer, "The Non-Fungible Token Bible: Everything you need to know about NFTs", *available at*: https://opensea.io/blog/articles/non-fungible-tokens (last visited on June 18, 2022).
[11] What is minting?, *available at*: https://opensea.io/learn/what-is-minting-nft (last visited November 17. 2022).
[12] Non-Fungible Token, *available at*: https://ethereum.org/en/nft/ (last visited November 18, 2022).

by the NFTs code. On OpenSea, the creators can receive up to 10% of every sale after the initial sale.[13]

2.1.2. Minting for collectors:

Minting NFTs is not just for creators, however. NFT projects often offers early access to their NFTs via a mint. When one mints an NFT from a project, he/she is the first ever owner of that NFT, since the mint is when it is written to the blockchain. Often times, participating in a project's mint is like buying a pack of Pokémon cards: one donot know if he or she will end up with something rare.[14]

2.2. Tokenization of NFT:

Tokenization is a process by which any physical work can be converted into NFT by using the block chain technology to provide the uniqueness and authenticity to any physical work. Such tokenized work can be used for the purpose of digital sale and ownership with the same level of protection available to any digital work. This could be done by either first tokenizing the physical work into NFT and later destroying the physical work for uniqueness and secondly by the process of microchipping the physical work which is incorporating the QR code to the physical work and such QR code will be created by similar way of minting a digital work.

3. Nuances of Authenticity of Digital work via NFT

NFTs give the ability to assign or claim ownership of any unique piece of digital art, trackable by using the block-chain technology through the distributed public ledger. Prior to blockchain technology, uniqueness was not pragmatic or unrealized in the digitalization world where copying is the breath of connectivity. Ownership of NFTs is managed through the unique ID and metadata that no other token can replicate. NFTs are minted through smart contracts that assign ownership and manage the transferability of the NFTs. A smart contract is an agreement in digital form that is self-executing and self-enforcing. In the transaction of the NFTs the process by which the execution occurs is through smart contract which means that smart contract is not a real contract as per the

[13] *Ibid.*
[14] *Ibid.*

meaning of Section 2(h) of the Indian Contract Act, 1872, rather it is a means to execute a contract alike a truck is used to deliver the goods for which a contract was executed.

NFTs have in-built smart contracts that specify particular rights. An artist may transfer ownership of the copyright of the work with the NFT, thus allowing the purchaser to exercise reproduction and communication rights.[15] When someone creates or mints an NFT, they execute code stored in smart contracts that conform to different standards, such as ERC-721.[16] For example, in the smart contract the coding for determining the owner or author of the work is encrypted as the *ownerOf* method which provides a way to look up the owner of an NFT. For instance, by querying ownerOf (1500718) on the CryptoKitties smart contract, we can see that the owner of CryptoKitty #1500718 at the time of writing is an account with the address 0x6452… This can be verified by visiting their CryptoKitty on OpenSea or on CryptoKitties.co. But how do OpenSea and CryptoKitties figure out what CryptoKitty #1500718 look like? Further, what about its name and unique attributes? This is where metadata comes in. Metadata provides descriptive information for a specific token ID. In the case of the CryptoKittty, the metadata is the name of the cat, the picture of the cat, a description and any additional traits (called "cattributes", in the case of CryptoKitties). In the case of an event ticket, the metadata might include the date of the event and the type of ticket, in addition to a name and description.[17]

Apart from providing the apparatus for NFT execution the smart contracts allow developers to place hard caps on the supply of non-fungible tokens and enforce persistent properties that cannot be modified after the NFTs are issued which gives the NFT an immutable and provable scarcity for any digital work along with maintain the uniqueness feature, which is a prerequisite for copyright-ability of any work. For example, a developer can enforce programmatically that only a specific number of a specific rare item can be created, while keeping the supply of more common items infinite. Developers can also enforce that specific properties do not change over time by encoding them on-

[15] Sebastian Marcu, "NFT Ownership: What does it actually mean?" *Studiolegal*, *available at*: https://studiolegal.com.au/blog/nft-ownership/ (last visited on October 3, 2022).

[16] *Supra* note 12.

[17] *Supra* note 10.

chain. This is particularly interesting for art, which relies heavily on the provable scarcity of an original piece.[18]

3.1. Standards of smart contract

3.1.1. ERC721

Pioneered by CryptoKitties, ERC721 was the first standard for representing non-fungible digital assets. ERC721 is an inheritable solidity smart contract standard, meaning that developers can easily create new ERC721-compliant contracts by importing it from the oracle (OpenZeppelin library or metadata). ERC721 is actually relatively simple: it provides a mapping of unique identifiers (each of which represents a single asset) to addresses, which represent the owner of that identifier. ERC721 also provides a permissioned way to transfer these assets, using the *transferFrom method*. These two methods are really all one needs to represent an NFT: a way to check who owns what and a way to move things around. There are a few other bells and whistles to the standard (some of which turn out to be very important for NFT marketplaces), but the core of ERC721 is quite basic.[19]

3.1.2. ERC1155

Pioneered by the Enjin team, brings the idea of semi-fungibility to the NFT world. With ERC1155, IDs represent not only single assets but classes of assets. For example, an ID might represent "swords", and a wallet could own 1,000 of these swords. In this case, the *balanceOf method* would return the number of swords owned by a wallet, and a user can transfer any number of these swords by calling *transferFrom* with the "sword" ID. One advantage of this type of system is efficiency with ERC721, if a user wanted to transfer 1,000 swords, they would need to modify the smart contract's state (by calling the *transferFrom* method) for 1,000 unique tokens. With ERC1155, the developer need only call *transferFrom* with quantity 1,000 and perform a single transfer operation. This increased efficiency, of course, comes with the loss of information and we can no longer trace the history of an individual sword.[20]

[18] *Ibid.*
[19] *Ibid.*
[20] *Ibid.*

Among the anatomy of the ERC20, ERC721 and ERC1155 standards, ERC20 maps addresses to amounts, ERC721 maps unique IDs to owners and ERC1155 has a nested mapping of IDs to owners to amounts.[21]

3.2. Storage of NFTs which have been tokenized

3.2.1. On-chain Metadata

The benefits of representing metadata on-chain are:

i. It permanently resides with the token, persisting beyond the lifecycle of any given application, and
ii. It can change in accordance with on-chain logic.

The former benefit is important if assets are intended to have long-lasting value far beyond their original creation. For example, a piece of digital art is expected to persist throughout the ages, regardless of whether the original website that was used to create the art is still around. It is therefore important that its metadata persist alongside the lifecycle of the token identifier.[22]

Additionally, on-chain logic may need to interact with the metadata. In the case of CryptoKitties, for example, the "generation" of the CryptoKitty influences how quickly a CryptoKitty can breed, and breeding all happens on chain (higher generation cats bred more slowly). So, the logic inside of the smart contract needs to be able to read the metadata from its internal state.[23]

3.2.2. Off-chain Metadata

Despite these benefits, most projects store their metadata off-chain simply due to the current storage limitations of the Ethereum blockchain. The ERC721 standard, therefore, includes a method called tokenURI that developers can implement to tell applications where to find the metadata for a given item. The tokenURI method returns a public URL. This, in turn, returns a JSON dictionary of data, something like the example dictionary for the CryptoKitty above. This metadata should conform to the official ERC721 metadata standard for it to be picked up by applications like OpenSea. At OpenSea, the intermediary provides service to the developers the ability to build rich

[21] *Ibid.*
[22] *Ibid.*
[23] *Ibid.*

metadata that can be displayed inside of their marketplace, so the OpenSea added extensions to the ERC721 metadata standard that allows developers to include things like traits, animations and background colors.[24]

4. Existing legal framework and their problems

Property is a broad concept that includes every intangible benefit and prerogative susceptible of possession or disposition. The court applies a three-part test to determine whether a property right exists or not: first, there must be an interest capable of precise definition; second, it must be capable of exclusive possession or control; and third, the putative owner must have established a legitimate claim to exclusivity. Domain names satisfy each criterion.[25] On the basis of these tests, the NFT fulfill all the required criteria to be considered as a digital property similar to the domain name.

The current online legal regime for the digital work under the intellectual property norms are quite hostile in nature with the digital work as in the cover of complete ownership IPR holder claw back significant rights with them instead of transferring the absolute interest in the asset to the purchaser through digital right management (DRM). In 2009 owners of George Orwell's 1984 published book were removed from the amazon kindle because the owner was not permitted to do so.

The legal regime for the digital work and digital property is at nascent stage and it should be developed for the protection of the author and owner of the work and also for the purchaser. With recent upgradation of the internet world by the WEB 3.0 which is essentially the internet powered by blockchains, it can be inferred that internet of value, decentralization, trust minimalization, permission-lessness and NFT is the by-product of said technology.

Even though the NFT is still an evolving concept in a larger domain, it could be an answer to the decade's old dilemma of ownership and transferability in digital work. Some of the NFT marketplace provides assistance for the same in the manner of deliberately putting on digital work which is displayed at such platforms for sale with regard to the ownership. The disclaimer which is displayed is something like "if you can't sell the item, you don't own it" by which it aims to "promote true ownership for the

[24] *Ibid.*

[25] Kremen v. Cohen, 337 F.3d 1024, 1030 (9th Cir. 2003)

players".[26] The evolution in the internet world at such a significant level have created a lacuna in the legal system because there are a number of cases surfacing around the globe over authenticity of digital work and larceny of NFT work of original owner and many such problems. To address the loop hole in the legal system there is a necessity to develop the legal norms parallel to the technological upgradation for a regulated progressive society. Therefore, through this note the author tried to address this issue in the following part of the paper.

The blockchain technology legal regulations are determined by the use-drive regulation approach that does not operate on the technological apparatus, rather on the means and manner by which the humans are using the technology, in short, the human interaction and encounter with the technology. For example, if technology is used for the crypto-currency then the RBI has to regulate it because the RBI, being the central bank, has the sole authority to regulate the flow and supply of money in the market. On the other hand, if NFT is used as securities then SEBI has the authority to regulate it. The technology is the same, that is blockchain, but the purpose for which it has been used determines the legal regulation to be implemented for efficacious operation.

This use-drive regulation approach is considered tokens that create property interests.[27] If a token is sold as property, treated by humans as property and passed down through wills as property then law will begin to take it seriously as property.[28] Legal scholars have argued for over a decade that when digital assets are treated by owners as personal property that is under trademark law, then the domain name of a trademarked property is intellectual property of that individual or company who is the legal holder of that trademark. Then, why can't the same level of normative recognition and protection be given to other digital work and content?

4.1. The Ownership vs. Licensee dichotomy

In developed countries approximately three out of every four citizens owns a computer or tablet or e-reader which reflects the dependency of people on the digital

---

[26] Gods Unchained, *available at*: https://godsunchained.com/https://perma.cc/YJL6-QKWF (last visited on October 15, 2022).

[27] *Ibid*.

[28] Access to Digital Assets of Decedents, *available at*: https://www.ncsl.org/research/telecommunications-and-informationtechnology/ access-to-digital-assets-of-decedents.aspx (last visited on October 05, 2022).

content and influence of the same on their lives. With the world-spread of Covid-19 pandemic and the shut down of the country's physical economy and limitations on human interaction, it was necessary to create and evolve a parallel digital world for all the essential needs and wants at a prolific level. Such an unprecedented scenario gave an opportunity to the third world nations to digitalize their economy at a certain level and facilitate the citizen to utilize it at greater extent for commercial gains, educational purposes or for any lawful purposes and as a result the amount of purchased digital content has concomitantly increased at rapid rate. Unfortunately, the purchaser of the digital content does not realize that when they involve themselves in the transaction to purchase the digital content, it only conveys the license to use the digital content rather than the ownership of the content.

Generally, most people do not read the terms and conditions when they are involved in digital transactions and later when they find out about the nature of the transaction, they are quite surprised that they are merely licensee to use the work and had a false conception of being the owner of the digital content. For instance, the Kindle Store Terms of Use states, "Upon your download of Kindle Content and payment of any applicable fees (including applicable taxes), the Content Provider grants you a non-exclusive right to view, use, and display such Kindle Content...."[29].

The major e-book or digital content providers impose the restriction through Digital Rights Management (DRM); it is a method which restricts the consumer from transferring ebooks to others (i.e., condition on alienation). DRM technology, which is embedded in a digital work before it is distributed to a consumer, assists copyright owners in controlling access to digital works as well as tracking and limiting uses of digital works."[30]

Let us take an example of traditional and digital work, printed books and e-books on kindle. The printed novel is sold to a person and now the publisher of the copyrighted work is an owner or licensee in the context of distribution and reproduction rights. The first sale doctrine would apply over here; the owner or licenser as the case may be, had

[29] Conditions of Use, *available at*: https://www.amazon.com/gp/help/customer/display.html?ref_=hp_left_v4_sib&nodeId=GLSBYFE9MGKKQXXM (last visited on November 21, 2022).

[30] Digital Rights Management (DRM) & Libraries, *available at*: http://www.ala.org/advocacy/copyright/digitalrights (last visited on November 05, 2022).

no business to control the after-sale effect to that protected work i.e., the buyer of the book could resell it or read it aloud in house (way of performance of work) or do parallel importing because such a condition on the alienation of the property would be against the provision of Section 10 of the Transfer of Property Act, the only restriction to which the buyer is subjected to is that he could not reproduce the copy by using copying machine except where such copying is for the purpose of fair use or fair dealing work research, educational, scholarship or critique purposes for non-commercial activity.

Now, in the context of e-books, when a book is bought by an e-reader it is merely a license to read that book for a particular time and under particular conditions, if J.K. Rowling granted the distribution and reproduction right to Penguin publisher for one year in which e-books are also permitted. Now, Penguin publisher provided e-books on the kindle application of Amazon and buyer A bought to read it under a detailed licensed agreement which was not direct application of the copyright law. But the license grant period left to Penguin was 4 months, thus after 4 months the book would automatically be removed from the kindle application as the copyright holder shall not be authorized to do so and continuing that effect would be considered to be copyright infringement.

In USA, the court had developed the RAM-Copy doctrine in the case of *MAI Systems Corp.* v. *Peak Computer Inc.*,[31] the court held that, because running a program created a temporary copy in a computer's Random Access Memory (RAM), running a software program constitutes prima-facie copyright infringement of a copyright owner's exclusive right to reproduce a copyrighted work.

The given example and the court dicta on the digital content gives an insight about the hostile nature towards the IP protected digital work at a greater extent and exploitation of consumer and pre-established general legal norms which has ultimately created a licensee vs. ownership dichotomy in the context of first sale doctrine - the legal rule of "nemo dat quod non habet" which means "no one gives what they do not have". Further the licensee of the digital content does not suffice with the right to sale or with the restriction on the use and enjoyment of the content.

4.2. First Sale doctrine in Digital Content or Transfer Doctrine

[31] 991 F.2d 511 (9th Cir. 1993).

The issue of extending the first sale doctrine to the digital content has been debated and considered for several years. In the line of the World Intellectual Property Organization treaties, the Indian legal system has implemented several provisions like compulsory licensing into the Copyright Act, 1957. However, it is to be noted that the digital content first sale doctrine is restricted by the provision of the sub clause (ii) of sub section (b) of Section 14 in the context of computer programme. The same has been permitted for physical copies under the sub-clause (ii) of sub section (a) of the same provision read along with the Section 52 of the Act.

Meanwhile, in the USA a study was conducted for extension of the first sale doctrine in digital work and the report concluded as: "The Digital Millennium Copyright Act (DMCA) Section 104 Report advised against expanding Section 109 to include a digital first sale doctrine because the U.S. Copyright Office did not find the analogy of digital transmissions to transfers of material objects to be a compelling one." Whereas physical copies of works will degrade with time and use, digital copies will not. Transferring digital content is much easier than transferring physical copies of copyrighted works from one person to another, because "time, space, effort and cost, no longer act as barriers to the movement of copies." The report indicated that allowing people to transfer digital content through voluntary deletion or automatic deletion schemes was unworkable due to the possibility of cheating. Furthermore, the report mentioned "forward-and-delete" technology by which a digital file is automatically deleted from a transferor's computer or device once he transfers it to someone else as unworkable because sufficient technology did not exist when the report was written. The U.S. Copyright Office indicated that there were too many differences between online digital transmissions and transfers of material objects to allow the first sale doctrine to apply to digital content. One significant difference, in addition to how digital files do not degrade over time, is the increased risk of piracy of digital content.[32]

The digital environment over a decade ago was very different from the digital landscape today. Arguably, technology exists today and is available to facilitate digital transmissions while avoiding risks of piracy and alleviating concerns about cheating. The report did not appear to anticipate the extent to which digital content would be

[32] U.S. Copyright Office, "DMCA Section 104 Report 97 (2001), *available at:* http://www.copyright.gov/reports/studies/dmca/sec-104-report-vol-1.pdf.

encumbered by licensing agreements that impose significant restrictions on a customer's ability to alienate purchased digital content.[33]

4.2.1. Case-study which reflects reluctance to develop digital first sale doctrine

i) Capitol Records, LLC v. ReDigi Inc.: [34]

In this case, the matter was of MP3 music secondary market for sale of music subscribed from the iTunes digital platform through uploading the music to Cloud locker for personal use or to resell it after the verification done by the respondent but the important point was that the Redigi focused on the conservation of copies dilemma which means that once the music is sold, the original licensee cannot access the same file where the subscriber is licensee of the material instead of the owner which is regulated by the End User License Agreement (EULA) with no exclusive right of resell or transfer the digital file to anyone further. In short no application of first sale doctrine on digital work.

ii) Kirtsaeng v. John Wiley & Sons, Inc.:[35]

In this case the court held that first sale doctrine has no implication of geographical limitation, but this case related to the subject matter of physical books. The application of the doctrine provides for no restriction on parallel importing, but this will not be the case if the book is in the e-book format. With this acknowledgment, the Court recognized how secondary markets can benefit consumers, businesses and non-profit organizations. Even though licensing was not the main focus of the opinion because the textbooks at issue did not have licensing agreements attached to them, the Court still made sure to point out that Section 109(a) "now makes clear that a lessee of a copy will not receive 'first sale' protection but one who owns a copy will receive 'first sale' protection, provided, of course, that the copy was 'lawfully made' and not pirated."

iii) European Union contentions on first sale doctrine:

In 2012 the European court of Justice (ECJ) ruled in the *UsedSoft GmbH* v. *Oracle International Corp*., that the first sale doctrine applies to used copies of software

[33] Sarah Reis, "Toward a Digital Transfer Doctrine - The First Sale Doctrine in the Digital Era", 109 *Northwestern University Law Review* 173 (2014).
[34] 934 F. Supp. 2d 640, 655 (S.D.N.Y. 2013).
[35] 568 U.S. 519 (2013).

downloaded over the Internet and sold in the European Union.[36] The ECJ held that a sale is an agreement by which a person, in return for payment, transfers to another person his rights of ownership in an item of tangible or intangible property belonging to him.[37] Countries within the European Union have differed in their interpretations of the ECJ's ruling. For instance, after the UsedSoft decision, the German District Court of Bielefeld ruled that purchased ebooks could not be resold by customers."

But in 2014, the District Court of Amsterdam ruled that an ebook reselling website could stay in business and declined Dutch publishers' requests to shut down the website.[38] Before reselling an ebook on the website, the seller must declare that he obtained the copy legally and also must agree to delete the copy once it is sold to another.[39] The website marks the e-book with a digital watermark and stores this watermark information in a database to prevent illegal distribution of e-books.[40] However, the service does not have a way to verify whether a copy was legally obtained or whether the original owner actually deletes the copy once he sells it to someone else.

4.2.2. Digital Exhaustion Doctrine Concerns

The U.S. Copyright Office viewed "forward-and-delete" technology as unavailable when the report was written, stating, "even assuming that it is developed in the future, the technology would have to be robust, persistent, and fairly easy to use."[41] Could NFT resolve the digital first sale doctrine paradox? Licensing does not attract the first sale doctrine because the exclusive right-holder still has control over subsequent sale, whereas absolute transfer of the interest in the property or work that is sold applies the principle of the first sale doctrine. If digital ownership only means that an item belongs to one particular individual and not to someone else, then he/she owns it in some sense. Digital ownership is more like ownership in the physical world (the freedom to hold and transfer indefinitely) but this does not always seem to be the case with digital assets. For instance, if anyone tries to sell a Fortnite skin on eBay, he will discover the difficulty of moving digital assets from one person to another. The legal framework surrounding NFTs

---

36 ECLI:EU:C:2012:407.

37 *UsedSoft*, 2012 E.C.R. 1-0000, at para. 42.

38 Loek Essers, "Dutch Courts Let's Ebook Reseller Stay Online", *Techworld* (July 22, 2014).

39 Andreas Udo de Haes, "Ebook Reselling Dispute Erupts in the Netherlands", *PC Advisor* (July 2, 2014).

40 *Ibid.*

41 *Ibid.*

is not conducive to ownership, because the intellectual property regime that currently governs the internet is hostile to digital personal property ownership, imposing the contract-and-licensing regime of intellectual property instead.

NFT is a technological advancement to assist reproduction rights in digital work. The reproduction rights create undesirable and unintended results in the digital context. NFT regime through blockchain technology provides an apparatus in the digital world which could help to implement first sale doctrine in digital work capable of getting protection under the copyright law; earlier in the digital work the exhaustion doctrine could not sustain the legal recognition because for the application of the doctrine the first copy have to be deleted for the purpose of the subsequent copies which has pragmatic approach i.e., "conservation of copies" (*Capitol Records* v. *ReDigi*[42]). Technology upgradation helped to resolve the dilemma of conversion of copies in the digital work that is Off-chain storage and bring the reform toward the EULA regime which is prevalent in digital work for decades. The existing legal regime of copyright law on the subject matter of digital work omits the reproduction right; physical copy of a legally obtained copyright work is treated identically to as personal property; one acquire right of personal use and alienate it (first sale doctrine), but the analogy of property fails in the digital work context which lead to EULA.

In India fair dealing and space shifting is permissible for personal use but no such right for the alienation or exhaustion doctrine is permitted in digital work and thus all the copies had to be deleted in order to emulate the non-digital legal regime. Licenses conceal the problem by granting users rights that make the works usable, such as "personal use rights" or the right to use the work on a certain number of devices, but they generally do not create a legal regime that exactly parallels the rights one gains when buying physical copies. The domain name is digital property in trademark law which is safeguarded by the similar legal protection as personal property i.e., protection from the conversion of property, breach of contract and breach by third party.[43]

This is where blockchains come in! Blockchains provide a coordination layer for digital assets, giving users ownership and management permission. Blockchains add

[42] *Supra* note 34.
[43] *Ibid.*

several unique properties to non-fungible assets that change the user and developer relationships with these assets.

Taking into consideration the contention and legal development which evolved the EULA and RAM-copy doctrine is in a way unjust for the person who bought ebook instead of physical book who only had limited rights on the work as compared to the other person and also limited to the manner in which he can use and enjoy his property comparatively with other and in the era of digitalization such a practice appears to be imposturous and absurd; while the blockchain technology upgradation which is used in the NFT market could be the answer to this issue.

Furthermore, the condition to use imposed by the kindle also restricts the resell or downloading or copying the content which is quite against the century old norms of the Sale of Goods Act, 1930 and Section 10 of the Transfer of Property Act, 1882, i.e., condition on alienation and enjoyment of property are void. And merely the format of any content from physical to digital cannot justify such restriction on the righteous purchaser. If digital transfer doctrine (like first sale doctrine in physical work) existed; secondary marketplace for digital work resell and then the evil of piracy and bootlegging would be significantly reduced and help to improve the revenue for the copyright work owners. Availability of the work to public at large, affordability and availability, for instance, secondary market place for pre-owned books helps economically large proportion of population to avail and reap the benefits of books which they could not afford when they strike the shelves on release date after years and so they circulate it in the secondary market at comparatively much lower price. The same helps to control the price market in much reasonable and natural way that the original publisher will reduce the price to compete and attract customers from the secondary market.

4.3. Digital transfer doctrine also facilitates to eliminate the anti-trust regime

Unconscionable benefit of technology by the digital giants through Digital Rights Management (DRM), i.e., providing IP protected work available on the digital platforms in the digital format only transfer the limited rights to the subscriber even though the price for physical and digital format of the work cost similarly along with the applicable taxes and leaving the transaction as license grant instead of sale by which the licensing agreement imposes significant restriction on the customer ability to alienate

purchased digital content. Thus the first sale doctrine would not be applicable on such transfer and the exclusive rights remain with the digital giants. Copyright holder of content in digital format can exert a significant degree of control over the content. E-books are "digital books that one can read on a computer screen or an electronic device" and are "created by converting digitized text into a format readable by computer software."[44] Leading case for the first sale doctrine in US was *Bobbs-Merrill Co.* v. *Straus*[45], whereby the Supreme Court held that a publisher could not impose a limitation on the price at which future retailers could sell the publisher's books. The court stated that "one who has sold a copyrighted article, without restriction, has parted with all right to control the sale of it." However, in dicta, the Supreme Court noted that the case did not involve a contract limitation or a license agreement that would control subsequent sales of the book.

The US copyright department report noted that there are possibilities for exhaustion doctrine in digital content but there is no such technology at that time to implement it. However, technologies to implement digital marketplaces do exist today. Amazon has already envisioned implementing a solution similar to what is proposed in this note; the company obtained a patent in early 2013 for a system that would permit resale of digital works.[46] Albeit, the move by Amazon appears to be just and equitable but still the patent would create the monopoly for 20 years in favor of Amazon and exploit the purchaser either way. The instant and perpetual solution for this is blockchain technology which facilitates and safeguard the interest of the creator and buyer. For the creator of a work a resale royalty is appropriate for digital works because it recognizes the unique risks that non-degrading digital formats connected to a vast and limitless distribution system pose for copyright owners. The same can be easily done by encrypting the code into the smart contract which would automatically claw back a portion of resale price and this could be done in respect of subsequent sellers also on downstream sale. This technology will ultimately create a fair and just environment for digital work and eliminate the abuse of dominant position by the digital company giants. And more importantly this will create the opportunities for the entry level artist and content creator,

---

44 *Random House, Inc*. v. *Rosetta Books LLC*, 150 F. Supp. 2d 613, 614-15 (S.D.N.Y. 2001).

45 210 U.S. 339 (1908).

46 U.S. Patent No. 8,364,595 (filed May 5, 2009), *available at:* http://www.google.com/patents/US8364595 (last visited November 12, 2022).

because a decentralized and digital marketplace would facilitate them to show-case work with cost efficiency and higher returns. These are underpinning principles which are incorporated into the WIPO conference to create a balance between creator and public interest and promotion of innovation at greater extent.

5. Conclusion

When people legally acquire digital work, they have certain intuitive expectations from such transactions in regard to using it. Unfortunately, due to the hostile nature of existing norms of intellectual property regime such expectation appears to be futile and whole transactions in the digital era end to be fallacy. Due to which the legal system ended up developing EULA and RAM-Copy doctrine which facilitated to grow the gab by creating the ownership vs. licensee dichotomy and by this the basic tenet of law which is to regulate the social transaction and interaction, efficacious and smooth turns to be a false hope, because the legal system inoperative in keeping pace with the rapid technological advancement. Even the WIPO's "internet treaties" and the "Umbrella Solution" were subjected to host country or transition country discretion. Eventually, the tenet of creating a balance with legal protection of IPR and public access, interactive making available to the public, a mirage.

Fortunately, the technological upgradation of NFT through block-chain technology is a reformative mean to rectify the dichotomy and even easily transmit the first sale doctrine into the digital work (digital transfer doctrine), by maintaining the uniqueness for elimination of problem of conversion of copies, which could assist in efficacious implementation of the first sale doctrine in digital work. It also gives a way out to develop a secondary market for digital work or any work in digital form (minting). Ancillary to these, the technology can also assist in regulating the big technology giants, exploitation of consumers and eliminate the decade long anti-trust regime prevailing in digital work by the means of EULA and DRM. Therefore, through this paper the author tried to explain the recent technological development and a way to integrate the technology with the legal system lacuna for developing a more efficient and purposive legal framework.