

A Study on the Applicability of Exhaustion of Distribution Rights to NFT Digital Works

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Abstract: *The digital economy has grown rapidly in recent years, causing changes in the global economic structure and competition patterns. While digital technology has brought cultural prosperity, it has also made digital copyrights vulnerable to piracy and infringement. Traditional copyright rules are ineffective in cyberspace, and the gap between technology and the law is becoming more apparent. However, the use of NFT in digital copyright can give digital works a tangible and scarce quality, similar to physical works. This creates a legal effect similar to the transfer of ownership of tangible objects, which can improve the legal effect of the distribution rights of digital works. Therefore, NFT can help address the lack of application of distribution rights for digital works.*

Keywords: *Digital Work, Distribution Right, Exhaustion of Distribution Rights, Non Fungible Token*

1. Introduction

The rapid development of digital technology and the explosion of user-generated content have caused the dissemination of works to shift from the traditional print-based carrier form to a more and more digitized form, prompting the digital transformation of the copyright industry to develop in depth. The exhaustion of distribution rights in the age of print is a complementary interpretation of the right of creators to exercise distribution rights, which essentially draws a line between the exclusivity of creators' copyrights and the availability of consumers' personal property. Exhaustion of distribution rights provides consumers with an exclusive right in rem to freely dispose of the works to which they have ownership and to freely resell and redistribute them without the constraints and limitations imposed by the creators. However, the application of the exhaustion of distribution rights in the digital age faces two major difficulties: the intangibility of the carrier and the inseparability of the act of distribution from the act of reproduction, which makes the application of the exhaustion of distribution rights to digital works impossible.

Digital space requires more creative and feasible solutions to address the challenges of digital copyright governance so that it complements the rapid development of digitalization. NFT, the full name of is Non-fungible token, is a unique cryptocurrency token for digital assets issued on the blockchain network, which enables the transfer of property rights of digital assets through smart contracts, and records the entire history of ownership in the tamper-proof distributed ledger. NFT is unique and irreplaceable in the digital world and is thus called the value machine that bridges the gap between physical and digital assets in the metaverse. As a new application practice of digital copyright governance, NFT provides a feasible technical improvement idea for the realization of the exhaustion of distribution rights of digital works. When the information of digital works is uploaded to the blockchain, with the help of the blockchain distributed storage and hash algorithm, digital works with a non-fungible nature are generated, and the process is called cryptographic authentication. The cryptographic authentication function of NFT makes it impossible to generate new copies of digital works in the process of transferring digital works, ensures that digital works are always unique, creatively gives digital works tangibility and scarcity, and generates legal effects similar to the transfer of ownership of physical objects in the transfer of digital works. The transfer of digital works has a legal effect similar to the transfer of ownership of physical objects, and can also be purchased, sold, displayed, gifted or even destroyed, which can effectively improve the application of the exhaustion of distribution rights of digital works.

The prototype of NFT can be traced back to the P2P network protocol improved based on Bitcoin transactions in 2012, which enables decentralized virtual asset transactions [1]. In 2014, Counterparty, a

peer-to-peer financial platform, was born, which supports users in crypto-virtual asset transactions and card games, and a large number of games have been issued on the platform since [2]. In 2017, Ethereum issued a blockchain game CryptoKitties by virtue of the ERC-721 smart contract, which allows players to use Ether (Ether: a virtual currency issued by Ethereum) to trade virtual assets. It is Ether's first NFT project, which adopts, feeds, and trades virtual cats, and tracks the ownership of individual virtual cats and their property transactions in a block [3]. All virtual cats in CryptoKitties are non-fungible, in general, they are unique and irreplaceable, and at the same time, the game allows players to trade in the secondary market, which makes the game exceptionally popular, and the total amount of transactions between players can even reach \$7.9 million. After that, NFT gained wide attention from the art and collection worlds. In March 2021, Christie's auctioned crypto artist Beeple's digital work in the form of NFT, *Everydays: The First 5000 Days*, which was sold at a high price of \$68 million, and its application value and field of application have been widely discussed and paid attention to [4].

2. Necessity of Application of Exhaustion of Distribution Rights for Digital Works

2.1 Theoretical Implications of Exhaustion of Distribution Rights for Digital Works

It is difficult to apply the exhaustion of distribution rights in cyberspace, but the value and significance of the exhaustion of distribution rights cannot be replaced by the existing digital copyright rules. As technology continues to advance, there is a growing concern about its impact on the creation of distribution rights standards. One proposed solution is to utilize technologies such as "resale and delete" and "download and delete" to restrict the number of copies of digital works during resale. The objective is to prevent the act of reselling digital works from resulting in an increase in the number of copies by employing technology. Using technology, the resale of digital works will not involve copying and will not increase the number of copies, to ensure the uniqueness of the works at all times, but it has not formed enough theoretical rules to support the application of the exhaustion of distribution rights of digital works.

However, technology always breaks through and rules are improved by technology. The well-regulated *Resale/Download and Delete Technology* has made a breakthrough due to the application of NFT, and its unique encrypted authentication feature ensures that no copies of digital works will be generated when they are resold, which essentially guarantees that digital works are always unique and creatively realizes the *carrier tangibility* of digital works. *Carrier tangibility*, bringing the possibility of technology-based digital copyright development changes, which will cause a huge change in the application of exhaustion of distribution rights in cyberspace in China, and provide a new research perspective for the theory of China's digital copyright governance, improve the application of the of exhaustion of distribution rights for traditional digital works by the NFT, and provide theoretical support for realizing the balance of the rights relationship in digital copyright and establishing a digital copyright secondary circulation market.

2.2 Practical Implications of Exhaustion of Distribution Rights for Digital Works

The study on the application of exhaustion of distribution rights for digital works is of practical significance in transforming the traditional rules of digital copyright governance and realizing the balance of interests between authors and rights holders. The skewed protection of rights is also bound to bring about conflicts and collisions of interests. Copyright law is to balance the interests between right holders and the public by setting up a system of rights and rights limitations, and one of its basic functions is to adjust the exercise of exclusive rights by authors and to promote the dissemination of cultural knowledge, and to harmonize the contradiction between the monopoly of the right holders based on their intellectual achievements and the access of the public to advanced cultural knowledge. Based on this, the copyright law does not give authors general or comprehensive control rights, but selectively gives the right holders partial control rights, so that they can only exercise their exclusive rights over the works conditionally. The exhaustion of distribution rights, as a necessary supplement to the right of distribution and a reasonable explanation, reconciles the conflict of rights between the author's copyright and the owner of the copies in the printing and publishing and makes the value of the copyright and the right of property to be balanced between the two. In cyberspace, the exhaustion of distribution rights is difficult to apply, and this balance is broken. To protect authors, the right of information network dissemination was set up to solve the problem, but the content of this right tends to protect authors rather than consumers, which means that it restricts the right of consumers to own and dispose of a certain digital commodity, and it is difficult for consumers to get effective protection

of their rights, and they may fall into the cycle of obtaining pirated copies and disseminating them at no cost, and authors' rights are not protected. Consumers' rights can hardly be effectively protected, and they may fall into the cycle of obtaining pirated copies at no cost and distributing them, while authors' rights are not substantially protected. Digital copyright governance in cyberspace requires a balance of interests, which is reflected in how to improve the application of exhaustion of distribution rights for digital works accurately and appropriately.

The study on the application of the exhaustion of the distribution rights for digital works is of practical significance for the creation of a distinctive digital copyright transaction model and the formation of a normative industrial policy. Digital technology has brought about a new digital copyright transaction mode, and this new transaction mode lacks an effective regulatory approach before a mature business model is formed. However, it is absurd to have to force a solution in the traditional transaction mode, to think that this new thing will not be accepted if no solution can be found in the traditional norms, or to use the traditional processing method in a far-fetched way for the digital environment. The prevalence of illegal communication in the digital environment is largely due to the absence of a legal market, and existing norms alone cannot solve the problem. The development of digital technology is a general trend, the current traditional market order is being broken, the new market rules have not yet been established, and the existing norms to make a one-size-fits-all treatment. The conventional approach of the copyright industry is to protect their rights and limit competition in the digital marketplace. However, this approach may impede the growth of new technologies and innovative business models. It is essential to establish a regulatory system that safeguards copyrights and fosters innovation in digital business models. This could be accomplished by implementing an industrial policy that focuses on digital technology and creating a digital copyright trading market that aligns with national conditions. The objective is to find a balance that protects copyrights while promoting progress in the digital world.

The study on the application of exhaustion of the distribution rights for digital works has practical significance for the establishment of the secondary circulation market of digital copyrights in China. From the perspective of balance of interests, several physical characteristics of the tangible carrier of the work, such as absoluteness, use value, etc., will produce value changes depending on the situation. After a traditional printed work loses its use value, the right holder can dispose of the printed work based on the right of ownership by reselling, gifting and destroying it, and in the process of resale and gifting, the secondary trading market is generated, which transfers the printed work, which has lost its use value, to other people, giving the work a circulation meaning and economic value. The process of resale and gifting creates a second-hand market, which transfers printed works that have lost their value of use to others, giving the works a circulation meaning and economic value. When it comes to digital works, distribution rights never expire and works that have lost their value cannot be resold. The only option for the right holder is to destroy the work, as it cannot be repurposed for anything else. This means that sharing digital copies of books in physical spaces could be seen as copyright infringement and piracy in the online world. The flow of knowledge and interpersonal communication in the physical world will be greatly discounted in cyberspace.

The extension of the exhaustion of distribution rights to digital works is not only a response to the balance of interests in digital copyright at present, but also an inherent demand for the development of the digital copyright trading industry. The emergence of NFT will bring unprecedented opportunities for authors and consumers to make use of digital technology and the Internet in the era of Web 3.0. Taking the application of new technology as a condition, improving the dogmatic constraints of the traditional digital distribution rules, and applying exhaustion of distribution rights to cyberspace to build a rights system for the second-tier circulation of digital copyrights are crucial to the establishment of a technological second-hand market of digital copyrights that is characteristic of our country and in line with the national conditions, and to stimulate the transaction of digital copyright market. This is of practical significance to the establishment of a technological secondary market for digital copyrights with Chinese characteristics and in line with national conditions and to the stimulation of the vigor of transactions in the digital copyright market.

2.3 Synthesis of Research of Exhaustion of Distribution Rights for Digital Works

The application of the exhaustion of the distribution rights for digital works has long been an enduring topic of discussion in the field of digital copyright governance. In the context of establishing a secondary market for digital copyrights and balancing the needs of exclusive rights of copyrights and rights of the public interest, the scholars' research views are broadly categorized into the perspective of rights interpretation and the perspective of technology, which are further categorized into four aspects:

the perspective of rights interpretation, the *resale/download and delete technology stage*, blockchain technology stage, and NFT stage. Moreover, there is a research change from *resale/download and delete technology stage - blockchain technology stage - NFT stage* on the technical level. It is not difficult to see the profound influence of digital technology on the improvement of exhaustion of distribution rights of digital works, and the progress of digital technology has inspired the scholars to change the perspective of the research problem.

When studying the application of the exhaustion of distribution rights for digital works from the perspective of rights interpretation, scholars' research is relatively single, whether it is the application of the exhaustion of the right of distribution or the right of information network dissemination with conditions and deadlines [5], or the limited exhaustion of distribution rights for digital works or the limited exhaustion of the right of information network dissemination [6], scholars want to apply them after interpreting the existing legal norms, and they consider the feasibility and operability only at the theoretical level. Even if the reasoning is sound, the implementation must consider China's national conditions and the established legal precedent that the exhaustion of distribution rights for digital works cannot be applied in cyberspace. This has been consistently upheld in judicial trials over a long period of time, indicating a mature and stable system of practice[7]. The changes and development of the digital technology era only through the doctrinal interpretation of the application of a certain rule, only left in the ivory tower discussion, and can not be convinced by the judicial system and the public. The interpretation of rights can safeguard the use of digital technology and its technical application process. By interpreting rights to establish more practical evaluation standards and judicial determination, the combination of theory and technical practice can lead to the exhaustion of distribution rights in cyberspace, thus paving the way for an optimal path forward.

When studying the application of the exhaustion of the distribution rights of digital works from the technical perspective, the technical goal is no extra copies of digital works, and if it can be ensured that no extra copies are produced in the transaction of digital works, the exhaustion of the distribution rights can be expanded to apply to the digital field to ensure the balance of interests between authors and consumers. In the discussion based on the technology of *resale/download and delete* [8][9], the technology of *resale/download and delete* has to a certain extent dispelled scholars' concern of denying the application of exhaustion of distribution rights to the cyberspace, but this technology is not reliable in terms of security. First, this technology is a centralized management approach that is easily hacked and rendered ineffective. Then, this technology has the risk of leaking the privacy of the users, the users need to purchase the corresponding digital product license certificate to obtain the access rights, they usually need to provide their personal information, which makes the personal privacy of the users threatened.

Therefore, scholars began to focus on blockchain technology with decentralization functions. Scholars have mostly researched the research idea brought about by combining the technology of blockchain with the example of Google e-books. The research idea brought by the combination of blockchain with resale with deletion technology [10], can make the resale of digital works with decentralization, intelligent traceability, and non-tampering become a reality, [11] but the technology also has big defects, i.e., it increases the unnecessary information cost and time cost to the users. Although scholars compare it to the effect of property rights to achieve paper books, but also only shows the destruction behavior in the act of disposal. The owners of digital works and other knowledge products that have lost their value would prefer to transfer them to others with or without payment to realize the economic value or social value, which cannot be realized by the exhaustion of the distribution rights for digital works under the application of blockchain technology, and blockchain e-books are still fundamentally different from physical books, and they cannot produce the similar or approximate effect of the transfer of property right.

The digital works based on NFT are different, because it can realize the unique and irreplaceable nature of digital products in cyberspace, truly endow the digital works with uniqueness and scarcity, and make the books in the form of NFT truly achieve the effect of disposition similar to the physical books, which can be purchased, displayed, destroyed, or even sold or gifted. The research of China about the application of digital copyright perspective mostly focuses on the determination of the legal attributes of digital copyright. Then the application value of digital copyright and the research is macroscopic but not in-depth, based on the research cannot understand why the exhaustion of the distribution right of digital works can be realized under the application of NFT technology, which is also the content that will be focused on in this research.

3. Theories Related to Exhaustion of Distribution Rights for Digital Works

3.1 Distribution Rights

Article 9 of China's Copyright Law stipulates that *the right of distribution, i.e., the right to make available to the public the original or a copy of a work by way of sale or gift*, according to which the resale of a work is a distribution act because it also conforms to the constituent elements of this article. The right of distribution in the narrow sense refers to the right of the creator to make available to the public the original or a copy of the work by way of sale or gift, and our legislation adopts the narrow concept of the right of distribution. The right of distribution in the broad sense refers to the creator's right to provide the public with the original or copy of the work by way of sale or other transfer of ownership, or by way of rental, lease, loan, etc. The narrow concept includes the right of rental and loan on the basis of the narrow concept. The United States, Korea and Germany have adopted the concept of broad distribution rights in their legislation.

The right of distribution of digital works refers to the expansion of the right of distribution applicable only to physical space to digital space. China's copyright law does not explicitly negate the application of the right of distribution of digital works, but the judicial practice is mostly based on the fact that digital works do not involve the transfer of ownership of tangible objects, and the process of transmission of digital works will inevitably involve copying behaviors, which does not apply to the right of distribution of digital works. Therefore, in order to regulate the authorization or resale of works in the digital space, the right to disseminate information network is set up separately to control the transmission of digital works, and the distribution of digital space is incorporated into the regulation of information network dissemination. When a consumer resells a digital work without authorization, the creator's right of reproduction and the right of information network dissemination, rather than the right of distribution, will be infringed.

3.2 Exhaustion of Distribution Rights

Exhaustion of distribution rights, also known as the first sale or the exhaustion of rights, refers to the fact that after a work's original or authorized legally made copy has been distributed to the public for the first time with the creator's permission, the creator's right of distribution has been exhausted, and he or she may not exercise his or her right of distribution again and has no right to control the re-sale or granting of that particular original or copy. The constituent elements of the exhaustion of the right of distribution are: the work in respect of which the right of distribution has been exhausted must be the original legally obtained work or a legally made copy authorized to be made; the right of distribution must be exhausted with the authorization of the creator, or the creator must have sold or given away the work to the public in accordance with the law. In judicial practice, the exhaustion of the right of distribution is inextricably linked to the tangible carrier of the work. The exhaustion of the right of distribution, as a supplement to and explanation of the exercise of the right of distribution, essentially confirms the ownership of the original and the copy of the work, and divides the exclusive nature of the creator's copyright and the alienability of the consumer's personal property. Article 4 of China's Copyright Law provides that *the exercise of rights by copyright holders and copyright-related rights holders shall not be contrary to the Constitution and the law, and shall not jeopardize the public interest*. Although this norm is not a definitive norm on the exhaustion of the right of distribution, the phrase *shall not jeopardize the public interest* implies that after the creator sells or transfers the work according to law, the creator's right of distribution of the work is exhausted, and the consumer is free to exercise the right of disposition based on the right of property, such as possession, use, and income. Exhaustion of the right of distribution is a limitation on the exclusive rights of the creator in order to protect the interests of consumers and to prevent unfair monopolization of knowledge by the creator, and has always played an important role in the field of traditional publishing.

With digital networks becoming an increasingly important means for creators to publish their works, the application of the exhaustion of distribution rights has become increasingly marginalized, and the application of the exhaustion of distribution rights for digital works has been questioned. The exhaustion of distribution rights of digital works refers to the fact that creators exercising the right of distribution once in the digital space have exhausted their rights, and are not allowed to exercise the right of distribution again, and are not allowed to control consumers' subsequent disposition of the digital works. However, as digital works are fixed in the intangible carrier of digital space, coupled with the fact that digital technology can reproduce digital works in large quantities at low cost and high quality, it is inevitable that a large number of pirated or infringing works will be produced, and it is

difficult for creators to obtain a return equal to their efforts. Continuing to apply the exhaustion of distribution rights and allowing consumers to resell legally obtained originals or copies of digital works will seriously affect the economic interests and creative incentives of creators.

4. Realization of Exhaustion of Distribution Rights for Digital Works

4.1 Realization of the Application of Distribution Rights in the Digital Space

The development of digital technology requires us to revisit the series of challenges that the traditional form of copyright, the right of distribution, faces in the digital space, and to consider whether and how the traditional right of distribution and the exhaustion of the right of distribution need to be adapted in order to cope with the new situation in the digital space. As mentioned above, there is a need and a dilemma for the application of the digital space of the right of distribution and exhaustion of distribution rights, and in the event that the traditional legal interpretation perspective cannot be effectively resolved, attempts can be made to accept the improvement of the traditional digital copyright norms with feasible digital technologies and the establishment of a new system of digital copyright governance rules. NFT has technical values such as non-fungible, decentralization, security and trustworthiness, automatic execution, etc., which can provide unique cryptographic authentication for digital works, so that no matter how many times the digital work has been replicated and no matter what kind of technology it has been replicated, the replicas traded on the non-chain will not be pointed by the NFT, and customize a new digital work for the digital work. This customizes the digital work with a unique identity in the network world. NFT gives digital works the *tangibility* and *scarcity* similar to printed works, which can also be purchased, sold, displayed, gifted, or even destroyed, and this process of digital copyright transactions will not lead to the transfer of ownership of tangible objects, but will result in a transfer of ownership similar to that of tangible objects. This process of digital copyright transaction will not lead to the transfer of ownership of physical objects, but will produce an effect similar to the transfer of ownership of physical objects [12].

The creator will original or authorized digital works casting for NFT form and public sale, the consumer can choose to buy the preferred works, by the smart contract automatic execution delivery, the digital works will be transferred from the creator's account to the consumer's account, the consumer that is to obtain the works. In this case, whether the creator's transfer is a sales act or a licensing act is the core issue in determining the nature of the transfer of digital works. If the transfer is defined as a sale, the creator's transfer belongs to the issuance of the act, and if it is defined as an authorization, the nature of the transfer belongs to the licensing of the act, and the consumer is only able to obtain the use of the authorization within the scope of the authorization of the work.

From the perspective of legal interpretation, although the judicial and academic circles generally consider *tangible carrier* as an element of the act of distribution, no clear corresponding provision can be found in the provisions of the Copyright Law, and *tangible carrier* is also the result of the legal interpretation of the provisions of the definition of the right of distribution, one of the purposes of which is to reconcile the contradictions between copyright and property rights. In essence, the core of the act of distribution lies in the effect of transferring the ownership of the original or copy of the work, and the element of tangible carrier under the traditional concept should be adjusted and changed according to the development of digital technology [13]. When the effect of ownership transfer can be generated in the digital space, the act of distribution should be allowed to be interpreted as providing the work to the transferee in the form of tangible or intangible carrier of the work by selling or gifting the work, and it cannot be restricted only by the tangible carrier, rejecting the right of distribution of the digital work based on the digital technology and the exhaustion of the right of distribution applicable to the right of distribution.

From the perspective of property right change, the transfer of ownership in the traditional property right system requires that both parties reach a consent and complete the public announcement of the meaning of ownership change, with delivery and possession of movable assets as the public announcement, and registration of immovable assets as the public announcement. NFT can map the ownership transfer elements in the traditional property right system to the digital world, and achieve the same ownership transfer effect in the digital world. This technology provides a unique ownership certificate for a specific digital asset, and no matter how many digital transactions are conducted, the digital asset can point to and only point to the current sole owner, and the two publicity requirements of possession and registration are completed at the same time, so that publicity and credibility of the right of property can be expressed. The public credibility of the right of property can be expressed. What's

more, different from the presumption of possession effect of the transfer of ownership of movable assets in the physical world, the registration effect of the unique proof of ownership realized by the NFT makes the digital assets have the effect of certainty of possession, and can effectively prove that the digital assets are owned by the user with certainty, instead of the presumption of possession [14]. Therefore, when the creator of a digital work creates an NFT of their work, once uploaded successfully, it means that the consumer is invited to enter into a contract, and the consumer pays and acquires the right to own the digital work through a smart contract. A contract for the purchase and sale of a digital work is entered into and completed by the creator and purchaser of the digital work. Completion of the digital works sales contract, rather than authorization contract, the transfer of the creator's behavior is actually a sales act, rather than authorization of licensing behavior. As stated in the *Fat Tiger Vaccine case*, the essence of the right of distribution is that the creator provides the content of the work to the consumer in the form of a gift or sale of the work carrier, which is accompanied by the transfer of the right of property in the original work and the copy. The transfer of digital works in the form of NFT essentially achieves the effect of transferring property rights between different civil subjects, producing the publicity effect of delivery with registration of possession, which can fall within the scope of the regulation of the right of issuance, and the nature of the transfer of the act of the creator should belong to the act of issuance.

Consumer resale, whereby consumers transfer legally acquired goods to other consumers by sale or gift, is an important way in which physical world goods are transferred to tangible goods. The flow of goods in the digital world is different, based on the network transmission mode, without the loss of digital goods, can produce countless copies at no cost, will involve both copying behavior and transmission behavior. Therefore, the nature of consumer resale in the digital world is usually recognized as an unauthorized act of information network dissemination, which infringes on the creator's rights of reproduction and information network dissemination.

However, technology always breaks through for technology, and norms should also be improved for technology. NFT can ensure the uniqueness of digital works in the transaction process, and no new copies will be created. ERC-721 smart contract truly realizes the decentralized upload with delete technology mode, and achieves the effect of transferring copies of digital works, which does not involve copying behavior [15]. Consumers can freely exercise the right of disposal after obtaining the ownership of the digital work from the upstream creator, and when consumers find that they no longer need the digital work, they have the right to resell the work to the downstream consumers with the autonomy of meaning of transferring the ownership, and the process of resale will go through the process of copying - transferring - deleting, but the smart contract will not cause any network problems. However, the smart contract will not change the storage location on the network technology transmission, and only retains the unique copy transferred to the downstream consumers' accounts, which will no longer involve the generation of new copies and the infringement of copy right. When the legal interpretation of the act of distribution is to provide the work to the transferee in the form of a tangible or intangible carrier of the work by sale or gift, the nature of consumer resale can be defined as an act of distribution [16].

When the Hangzhou Internet Court heard the case of *Fat Tiger Vaccination*, it pointed out that the transaction of digital works in the form of NFT could achieve the two effects of distribution and network dissemination at the same time, but the act of distribution should be covered by the content of the act of dissemination in the information network, and the transaction should fall within the scope of the right to disseminate the right of dissemination in the information network [17]. It can be said that, in addition to the controversy of *tangible carrier*, another controversy is that if the application of the right of distribution for digital works is recognized, there will be an overlap between the scope of protection of the right of information network dissemination and the right of distribution. However, it does not seem feasible to deny the application of the right of distribution for digital works on the basis of this controversy. For one thing, the right of dissemination of information network regulates the act of uploading digital works to the public Internet environment and providing them to unspecified viewers who are free to choose the time and place, and the act of selling or giving digital works to specific objects in a peer-to-peer manner on a NFT platform does not meet the requirements for the application of the right of dissemination of information network, and it is difficult to fit the actual damages suffered by the copyright owner [18]. Secondly, the overlap of the scope of protection of rights does not mean that the application of another legal norm is denied. In terms of regulatory content, the right of distribution and the right of information network dissemination deal with different copyright disputes, the right of distribution points to the act of sale, and the right of information network dissemination points to the act of authorization and licensing, and there is an obvious difference in the content of the regulation; in terms of the logic of the regulation, it is not an exception to provide double protection of

rights for the same thing. In terms of the logic of regulation, it is not unusual to provide dual protection for the same thing, such as the right to reproduce and the right to disseminate information network, and creators can either choose to protect the two rights in segments, or obtain the optimal compensation for infringement through the competition of rights.

4.2 Applicable Realization of Exhaustion of Distribution Rights in the Digital Space

The similarity between the effects of the transaction and distribution act of digital works of NFT is determined by the special nature of the technology, which can produce legal effects approximating the transfer of ownership in the physical world, without generating redundant copies and guaranteeing that the digital work is always unique. The application of the exhaustion of the right of distribution lies in the fact that the act of distribution is directed at the transfer of ownership, and coordinates the contradiction between the right of distribution in the copyright law and the ownership in the civil law. When the NFT can bring the effect of approximating the transfer of ownership of the physical object to the act of distribution of the digital work, the exhaustion of the right of distribution gains the basis of and necessity for the application in the digital space.

The application of the exhaustion of distribution rights for digital works legitimizes the resale of legally minted digital works in the form of NFT. For the distribution of traditional copyright trading market, after the creators put their works on the market for the first time, the income based on the royalties of the works and a certain amount of sales will be able to recover the cost of creation, and if the resale behavior of the consumers is controlled to obtain additional profits, it will seriously impede the free circulation of the commodity market and the effective dissemination of knowledge. In order to protect the public good, the boundary of ownership strictly distinguishes between the copyright interests of creators and the economic interests of consumers. The digital copyright trading market is different, creators in the creation of digital works in the process of intellectual labor is not less than the traditional publishing creators, but digital works royalties are significantly lower than the printed works, coupled with rampant Internet piracy so that the sales of the work doubly affected by the creators of the one-time distribution can not be matched with the intellectual input of the market returns. If the exhaustion of the distribution rights for digital works is allowed again, and the resale of digital works is legalized, it is obvious that it will bring a huge blow to the motivation of creators. It can be said that one of the original design intentions of the NFT, which is to realize the non-homogenization of goods in the digital world, coincides with the solution to the dilemma of legalizing the resale of digital works. NFT can enable digital world commodity transactions to produce the same transaction effects as physical world commodity transactions, digital commodities are creatively endowed with uniqueness and scarcity, as well as the ensuing investment value, and there is a growing demand for the legalization of digital commodity resale practices. The application of the exhaustion of distribution rights for digital works can precisely satisfy the interests of both creators and consumers. The creator can set a higher distribution price based on the non-homogenized characteristics of a particular digital work, or set a certain percentage of retroactive benefits through a smart contract, allowing the creator to claim compensation for the value-added portion of the consumer's resale transaction. The consumer acquires ownership of the digital work at once, and is free to sell or gift it to others without the creator's permission in order to obtain a higher investment or use value.

The exhaustion of distribution rights of digital works, as a necessary supplement to and explanation of the right of distribution of digital works, has an important stabilizing and controlling effect on the normativity of the order of transactions of digital works, and [19] is an inevitable governance norm required for the establishment of a market for the circulation and transfer of digital works. The existing digital space provides feasible technical soil for the application of the right of distribution for digital works and the exhaustion of rights, and the improvement of the traditional digital copyright governance norms by NFT can effectively make up for the deficiencies and shortcomings of the existing governance.

5. Conclusion

While new fields and new forms of intellectual property rights play a unique role in solving digital copyright problems, it should be recognized that the application of digital technology to realize the exhaustion of distribution rights for digital works should be discussed in a legal framework. The encryption and authentication function of NFT ensures that no new copies of digital works will be created during the transfer of digital works, ensuring that digital works will always be unique, and

creatively endowing digital works with *tangibility* and *scarcity*. With *tangibility* and *scarcity*, the transfer of digital works produces a legal effect similar to the transfer of ownership of tangible objects, which can also be purchased, sold, displayed, gifted, or even destroyed, and can effectively improve the application of the exhaustion of distribution rights for digital works and its shortcomings. As a value machine running on the blockchain network, NFT can facilitate the on-chain circulation of all digitizable assets, which is the cornerstone of the meta-universe transaction order. NFT with digital copyright brings a solution to the difficulties in the development of traditional digital copyright, and its universal application also promotes China's participation in the establishment of an internationalized order of intellectual property rights in new industries and new fields, which has vigorous development potential.

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