

Research on Copyright Protection System of Digital Works under NFT Trading Mode

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Abstract

As an application scenario of blockchain technology, NFT is used to solve the problem of lack of trust and security between the trading parties in the process of digital asset trading due to its characteristics of indivisibility, replication and rewriting. In recent years, with the emergence of many NFT trading platforms, it has gradually developed into a new business model. Science and technology is a double-edged sword. While this trading mode is developing rapidly, it also has an impact on the current legal order and has produced a series of new legal problems. Through the analysis of the copyright of digital works in the development of NFT trading mode, combined with typical cases, this paper sums up the problems of copyright infringement risk and lack of remedies under the NFT trading mode, and puts forward suggestions on copyright protection such as further clarifying the ownership of NFT digital works and strengthening the platform compliance construction through legislation. In the future, we should continue to strengthen the research on the NFT copyright protection system, explore new plans and suggestions for establishing a digital economy development and accelerating the construction of an intellectual property power.

Keywords

Digital Works; Non-Homogenous Equity Certificate; Blockchain; Copyright Protection.

1. Introduction

With the rapid development of AR/VR, big data, 5G and other technologies, and the deepening of digitalization, the Internet will usher in a new stage of development - the metaverse. At that time, people's shopping, watching performances, playing games and other activities in reality will be moved to the metaverse, and people's lifestyle will be fundamentally changed. The metaverse is divided into five fields, including social networking, blockchain, and game. NFT is one of the main applications of blockchain in the metaverse. NFT is the English abbreviation of Non-Fungible Token, which is called "non-homogeneous token" in China. As a differential digital property issued on the blockchain, people can use blockchain technology to digitize handicrafts and establish digital property rights, so as to facilitate transactions in the virtual world. In other words, NFT is a digital property certificate that cannot be split and can be traded, registered and marked in the virtual world, which has aroused widespread attention. In 2021, it was named the first popular word of the year by Collins Dictionary.

NFT was initially applied to the digital works trading market. In March 2021, the digital artwork "Every Day: The First 5000 Days" of encryption artist Beeple was sold by Christie's, a world-famous auction house, at a high price of \$69.34 million. MetaKovan bought the artwork. In addition, Sun Yuchen, founder of Wave Field, spent \$10.5 million to buy an NFT artwork and used it as his WeChat and Twitter avatar. These amazing transactions have made NFT out of the circle. In foreign countries, well-known institutions such as Nike, NBA and Marvel have joined in the layout of NFT, and domestic Internet enterprises such as Tencent and Ant Group have also launched the NFT trading platform. According to relevant data, the size of NFT market will

exceed 26.9 billion US dollars in 2021, which has great development prospects. At present, NFT is gradually applied to games, art collections and other fields. With the rapid development of the digital economy, it will expand into more fields, with huge development space.

NFT trading has made significant changes in the digital works trading chain, but at the same time, NFT trading has also brought challenges to the current legal order. For example, when uploading works on many NFT trading platforms, the infringer can cast the works without authorization into NFT for sale without showing the certificate of title, thus making profits. In addition, all traders on the blockchain trade anonymously, resulting in the inability of copyright owners to protect their rights because they cannot find the infringer. Based on this, this paper takes digital works under NFT trading as the research object. First, by analyzing the NFT trading process, it clarifies the essence and trading rules of NFT trading of digital works; Secondly, combining with relevant cases, explore the copyright risks arising from NFT transactions; Finally, from the perspective of copyright protection, the author puts forward relevant suggestions and measures to improve the existing problems.

2. Nature and Rules of NFT Transaction

2.1. NFT and Digital Works

The so-called NFT is an encrypted digital rights certificate generated by the blockchain that cannot be copied, rewritten and split. It is used in the transaction of digital assets to solve the trust and security problems between the transaction subjects. In essence, NFT is a set of time-stamped metadata on the blockchain. It can achieve unique and unchanging directivity with a digital file stored in a certain location in the Internet. This set of metadata is displayed as a specific URL link or a set of hash values that store specific digital content. For us, we can access the link or use the hash value to retrieve the specific digital content stored in the entire Internet network. In other words, the specific performance of NFT is to transform digital content into specific trading objects by using blockchain, smart contract and other related technologies, and realize transaction and circulation on the platform in the form of specific objects after forming a unique and constant correspondence and having certain transaction value. Because each NFT is unique and cannot be exchanged, the forged NFT becomes an irreplaceable equity certificate on the blockchain. At the same time, with the support of smart contract technology, one of the biggest features of NFT is that it can record the initial issuer of digital content, each circulation information that may occur in the future and the release time and other relevant content without omission. Traders can witness it synchronously through all nodes on the blockchain, so as to ensure the security, credibility, openness and transparency of digital content. According to the differences of specific object forms, NFT can be divided into asset-based NFT and right-based NFT. The former refers to the NFT of various physical or digital assets, such as some digital avatars, digital commemorative badges, etc. The latter refers to the right of the holders to use a specific commodity or service, including online game landing qualification, watching performance qualification, etc., or the right to hold equity, bonds, etc. Therefore, it is called "NFT digital works" or "NFT digital collections" in practice, which is a typical asset-based NFT.

2.2. NFT Transaction Process

At present, the NFT trading platform mainly includes the official distribution platform operated by the copyright owner and the third-party trading platform, of which the third-party trading platform is the mainstream. For example, in China, Alibaba Auction launched the "light paper" NFT digital collection display platform; Tencent has created an NFT trading platform - "Fantasy Core", which is used to sell artists' co-branded digital artworks.

The NFT transaction process generally includes three steps. Step 1: Internet users need to select a trading platform to register. As far as the seller is concerned, it is necessary to upload the

digital works stored in the computer to the platform. Generally, the platform only has restrictions on the size of the files and supports multiple formats such as moving pictures and pictures. Then fill in the basic information including the name and attributes of the works. Step 2: Set transaction conditions. As far as the buyer is concerned, there are differences in the number of works to be sold. If only one work is sold, then one and only one work is sold. If more than one work is sold, then the number of works to be sold needs to be set. For art, photography and other works of art, in order to preserve the scarcity of works, the seller often prefers to sell only one. In addition, the seller can set the price, selling time, selling method and other factors. The third step is to select a smart contract. At present, many trading platforms adopt Ethereum ERC721 as the standard smart contract, which contains the agreement of intention or offer acceptance between trading entities. In addition, any NFT has a "ID number", which corresponds to the smart contract code on the blockchain. People can use the "ID number" to find the contract website on the blockchain. After opening it, they can view the contract code corresponding to the NFT and query the metadata of the NFT. After the buyer finds the works he likes and pays the transaction fee through the digital wallet, he can become the owner of the works publicly displayed on the platform. At the same time, under the function of smart contract, the blockchain will also generate the owner's relevant information.

According to the above analysis, NFT is essentially a string composed of metadata and specific location information. NFT digital works are not a new type of works. For example, when they exist in the virtual space in the form of data and have value attributes, they belong to digital goods. At the same time, NFT digital works have a certain degree of uniqueness, dominance and specificity, which conforms to the basic characteristics of virtual property, and can be classified as virtual property. Based on this, during the transaction of NFT digital works, both parties only transfer the ownership in form. This is because according to the provisions on ownership in the title part of the Civil Code, there is no ownership of virtual property. This transaction is only the transfer of virtual property, not the transfer of ownership. How to define the legal nature of virtual property is controversial in academic and practical circles. However, most people believe that virtual property should be protected as a kind of property rights, such as NFT digital works.

3. Typical Cases of NFT Digital Works

3.1. Case Analysis

Ma Qianli is a cartoonist. He once created a series of art works of "I'm not a fat tiger" under the pseudonym of "no two horses". Later, he registered an account on the microblog platform and published the art works of "fat tiger hits the vaccine", which was deeply loved and concerned by netizens. By signing a contract with the plaintiff Shenzhen Qice Diechu Cultural Creativity Co., Ltd. (hereinafter referred to as "Qice Company"), Ma Qianli obtained the global exclusive license to use the series "I am not a fat tiger". After the plaintiff's operation, Little Fat Tiger has become a popular popular popular IP, and its related derivatives have also brought considerable economic benefits to the plaintiff. However, the plaintiff later found that the NFT trading platform of the defendant Hangzhou Yuanhe Ze Technology Co., Ltd. (hereinafter referred to as "Yuanhe Ze Company"), Bigverse, had users casting and publishing the NFT works of "Fat Tiger Vaccine" at a price of 899 yuan. After some comparison, the plaintiff found that this work was identical to the illustrations published by Ma Qianli's Weibo in terms of both content and design concept. Based on this, the plaintiff believed that the defendant failed to fulfill the reasonable review obligation and violated its right to information network transmission, thus requiring the defendant to stop the infringement and pay compensation. The defendant has the following three claims: first, the infringing works are uploaded by users themselves, and as a third-party platform, they have no obligation to review in advance;

Secondly, when the platform discovers the infringement of the works, it immediately puts the infringing works into the address black hole, and has fulfilled the obligation of notification - deletion; Finally, this case should apply the "principle of exhaustion of rights". After hearing, the Hangzhou Internet Court ruled that the defendant should immediately delete the infringing works and compensate the plaintiff for economic losses and reasonable expenses totaling 4000 yuan.

3.2. Comment on the Reasons for Judging

First of all, in the absence of specific legal provisions, the court's decision made it clear that the transaction of NFT digital works is controlled by the right of information network transmission. Although the transaction object of NFT digital works is the digital works themselves, and the legal effect formed in the transaction process often shows the transfer of ownership, the essential feature of the distribution right is the transfer of ownership of the original or copy of the works. In addition, because the property rights protected by China's existing legal system do not include virtual property, the court held that the act of selling NFT digital works on a third-party platform without the permission of the copyright owner is not distribution. In addition, when NFT digital works are traded, the target is the unspecified public. They can freely choose the trading time and place with the help of smart contracts, so this mode can meet the characteristics of information network transmission behavior. The purpose of reproduction is to provide works to the public through network, which is a necessary process of network transmission. Therefore, the damage caused by reproduction to the obligee can be absorbed by the damage caused by information network transmission to the obligee, which will not be repeated in this article.

Secondly, the judgment held that the NFT digital works did not apply the principle of exhaustion of rights. The principle of exhaustion of rights, known as the "principle of first sale" or the "principle of exhaustion of distribution rights", refers to the fact that the owner of the original or copy of the work obtained by legal means can sell or gift the work again without the permission of the copyright owner, with the purpose of protecting the free circulation of goods by restricting the copyright owner's distribution rights. Because the principle is mainly applicable to the field of tangible carriers, there are disputes between academic and practical circles as to whether the principle is applicable to digital collections. China's copyright law adopts a dualistic structure of separation of distribution right and information network communication right, in which the distribution right is applicable to the ownership transfer of tangible works, and the digital communication behavior is all regulated by the information network communication right, which is also a common practice in judicial practice. The relevant judicial documents also indicate that "the act of controlling the right of reproduction and distribution should be based on the existence of the work on the tangible carrier, and the placing of the work in the Internet is the full protection scope of information network transmission". Therefore, on the one hand, the right of distribution should still be limited to the category of tangible carriers. Digital works are not applicable to the regulation of the right of distribution because they are not tangible, and thus the principle of exhaustion of rights is not applicable. On the other hand, due to the scarcity of NFT digital works, if NFT digital works can be copied in large quantities without cost and restriction, it is not conducive to the protection of the legitimate rights and interests of the copyright owner. In addition, as mentioned above, the NFT transaction mode conforms to the characteristics of information network transmission, does not belong to the scope of distribution authority, and should not apply the "right exhaustion principle".

The final judgment further clarifies that the platform needs to undertake a higher duty of review and attention in the transaction process. In this regard, the court clarified the responsibility boundary of the platform from the aspects of transaction model, technical characteristics,

platform control and profit model. In terms of trading mode, the founder of NFT digital works is not only the owner of the works or copies, but also the copyright owner or licensee of the digital works. Therefore, as a platform specialized in NFT trading, the works should be reviewed in advance to avoid infringement. From the technical point of view, as an application scenario of blockchain, NFT solves the trust and security problems between the two parties by building a new network transaction integrity system. In this case, when there are rights flaws in the digital works traded, it will not only destroy the trust system built between the trading subject and the platform, but also damage the certainty of the entire trading order and the legitimate rights and interests of the copyright owner and the trading counterpart, and adversely affect the healthy and sustainable development of the NFT industry. In terms of platform control, all data generated under this transaction mode are saved by the platform, and the platform has strong control over the transaction process; At the same time, only works that have been reviewed and approved by the platform can be put on the shelf and traded. In addition, each time users submit a single work. Therefore, the platform involved not only has strong control ability and corresponding review conditions, but also does not add additional burden and cost to the review. Fourth, in terms of profit model, the profit of the platform involved in the case mainly comes from two aspects: the work gas fee at the time of casting the work and a certain commission and gas fee after the transaction is successful. In view of this, the platform should bear a high duty of care.

To sum up, the court discussed the duty of care and relevant responsibilities of the platform at the legal level through investigation in the case without explicit legal provisions; By defining the nature of infringement and the scope of stopping infringement, in terms of stopping infringement measures, the innovative proposal is that the platform can achieve the purpose of preventing the proliferation of infringement content by disconnecting the connection and inserting the product involved into the address black hole. At the same time, the case fills the gaps in the judicial precedents of the domestic NFT industry, and has certain guidance and reference significance for the development of the emerging industry of NFT.

4. Copyright of Digital Works in NFT Transaction

As a new technology, NFT plays an important role in protecting the copyright of the original author, the income of the original author, and anti-counterfeiting and anti-theft. However, technology is a double-edged sword. Since China's current legal system and regulatory system have not clearly stipulated the copyright protection of digital works under this model, the copyright of digital works faces major risks and challenges, which are embodied in the following aspects.

4.1. Copyright Infringement Risk

As mentioned above, NFT has the characteristics of tamper-proof and replication, which can avoid the risk of intellectual property infringement to a certain extent, but the risk is also huge. Because of the intangible nature of intellectual property, most of its objects depend on material carriers. Based on this, NFT can be seen as the material carrier on the blockchain after the work is virtualized. Therefore, owning NFT works does not equal to enjoying the intellectual property of the original works. For example, the NFT trading platform "Magic Core" created by Tencent pointed out in the software license and service agreement that the relevant information about the buyer can be written into the NFT digital works as a certificate of ownership. Although the ownership change record of digital works after being linked can prove the owner, when NFT is not regarded as a work, the buyer only buys NFT itself. In addition, according to the relevant provisions of the Copyright Law, when the copyright of the original work is involved in the NFT casting process, a contract should be signed with the original copyright owner first, and the foundry should be the copyright owner of the original work or be authorized. For example, in

the "Fat Tiger Fight Vaccine Case", the infringer forged the work of Ma Qianli into the NFT digital work and traded it without authorization, Infringement in accordance with Article 53, paragraph 1 of the Copyright Law.

At present, China's NFT digital works can be distributed in two ways: platform invitation system and free distribution system. The former is like a trading platform such as Fantasy Core. Only artists or institutions that have been recognized and cooperated with the platform can distribute digital works on the platform. The advantages of such platforms are low verification costs, good control of the quality of works, and low feasibility of intellectual property infringement. The latter, such as Pixel Bee, is that any user can freely publish works without cooperation with the platform or being invited by the platform. The reason for the lack of such platforms is that the quality of works is difficult to grasp and the platform review is difficult. Generally speaking, the "safe haven" principle is an important principle to exempt the platform from liability, but due to the characteristics of blockchain technology, it is difficult to apply this principle.

4.2. Lack of Risk Relief Means

According to the rules of intellectual property transactions in the network environment, the self-help rules that programmers participate in and write are designed to minimize the number of times to seek public remedies, which is objectively powerless. This is mainly because the new trust system established by NFT challenges the principle of integrity. The reason why authors of digital copyright can sell their works is that the copyright owner abides by integrity, authorizes licensing and notification, and then the user pays. Blockchain technology transforms this trust endorsement method into algorithm driven, and builds algorithm mutual trust. As Robin Lee said, "The only job of the algorithm is to enable you to achieve goals more effectively and accurately, rather than tell you why." It shows that in copyright trading, the other party only looks at whether copyright is registered on the chain rather than personality, reflecting the lack of restrictions on copyright when designing smart contracts in the blockchain, As a result, the relief means relying on the principle of good faith are difficult to work. In addition, due to the anonymity of the transaction subject and frequent transactions in the transaction process, when the rights are infringed, the losses of the victims are often difficult to make up. For example, when the buyer's NFT digital works are stolen, at present, only the way of locking and stopping the transaction can be adopted. However, this method cannot return the NFT to the buyer's digital wallet, bringing irreversible economic losses to the obligee. China's Copyright Law does not make clear provisions on the destruction of works, but due to NFT technology, digital works cannot be deleted or eliminated. Instead, they are inactivated by other means, namely black hole address. In this way, digital works will not disappear, just lose their due value. The court took this relief measure in the "Fat Tiger Fight Vaccine Case", but some scholars pointed out that there are differences between NFT digital works and digital goods, and the court did not make a distinction. It is wrong to take the method of entering the address black hole because the works involved are digital goods. This is because in terms of digital goods, the NFT digital works involved in the case have been sold. If the address black hole is used, it will not only infringe the property rights of the purchaser, but also cannot realize the relief for the infringed.

5. Copyright Protection Scheme of Digital Works in NFT Transaction

5.1. Clarify the Ownership Nature of NFT Works

The premise for the protection of NFT digital works is to confirm the rights of the works first. The copyright owner will cause the outflow of some rights when creating. These rights belong to every work of the author. They may be economic rights, natural rights or spiritual rights. The

Berne Convention recognizes that authors of literary and artistic works have the exclusive right to approve the adaptation, arrangement and other modifications of their works, so that authors can maintain the integrity of their works. The author's copyright is the product of the combination of economic rights, moral rights and natural rights. Because the existing legal system does not clearly define the nature of copyright, in practice, often because the nature of NFT digital copyright is not clearly defined, resulting in frequent infringement cases. Therefore, China not only needs to clarify the nature of NFT works' rights through legislation as soon as possible, but also should give full play to the incentive function of copyright, so as to realize the copyright owner The owner of the work and other subjects can obtain the right of use and enjoy the benefits generated within the validity period of the blockchain.

5.2. Strengthen Platform Compliance Construction

At present, the distribution and trading of digital works mostly depend on the major NFT trading platforms, which are the key link of copyright protection of digital works. With regard to the online NFT trading platform in China, users need to register in real name. At the same time, the attention and management obligations of websites that focus on user-produced content (UGC) are relatively lower than those of websites that focus on professional production content (OGC). In the "first case of infringement of WeChat widget" announced in 2018, the court held that Tencent was not a "network service provider providing information storage space or search and link services", so it should not assume the obligation of "notification+removal" to remove the involved widget. In practice, most NFT trading platforms, like Tencent, are objectively difficult to verify the legitimacy of the products circulated on the platform, and the services provided are not information storage space or search links, which are non-discriminatory and passive, except as explicitly stated in the service agreement of the platform. How to effectively prevent the occurrence of piracy and infringement of NFT digital works, it is not only necessary to further implement the NFT platform's rules of prior review and real-name authentication for users, but also to clarify that the platform should perform the necessary obligation of risk disclosure, adopt real-name system for both parties to the transaction, and establish a personal privacy database, including transaction records, digital wallets, etc. This database, in addition to the inquiry of relevant judicial authorities during investigation and evidence collection No social organization or person may inquire. Of course, the supervision of NFT trading platform should not only rely on top-down regulation, but also strengthen user self-management. Before purchasing NFT works, users should make good preparations, such as the verification and investigation of platform reliability, whether the works involve infringement and other relevant information, and start from themselves to reduce the occurrence of risks.

6. Conclusion

The value of works lies in dissemination. Strengthening the copyright protection of digital works under the NFT trading mode is the essence of promoting the sustainable and healthy development of the digital economy and the construction of an intellectual property power in the new era. During the "13th Five-Year Plan" period, the country included the protection and application of intellectual property rights into the key special plan for the first time. Therefore, in the opening year of the "14th Five-Year Plan", we need to strengthen the protection of intellectual property rights, improve the management level of intellectual property rights, and accelerate the construction of an intellectual property power. With the continuous maturity of blockchain technology and the wide application of NFT, the NFT trading mode not only solves the liquidity of digital works, but also further changes the non-scarcity of digital works carriers. Technology is a double-edged sword. NFT not only brings opportunities to the copyright market, but also provides new soil for copyright infringement. In the future, more attention

should be paid to copyright infringement and the lack of remedies in the NFT industry, and the nature of the ownership of NFT digital works should be clarified through legislation, the relevant obligations and responsibilities of the platform should be improved, and the platform compliance construction should be strengthened, so as to promote the healthy development of the NFT trading model.

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