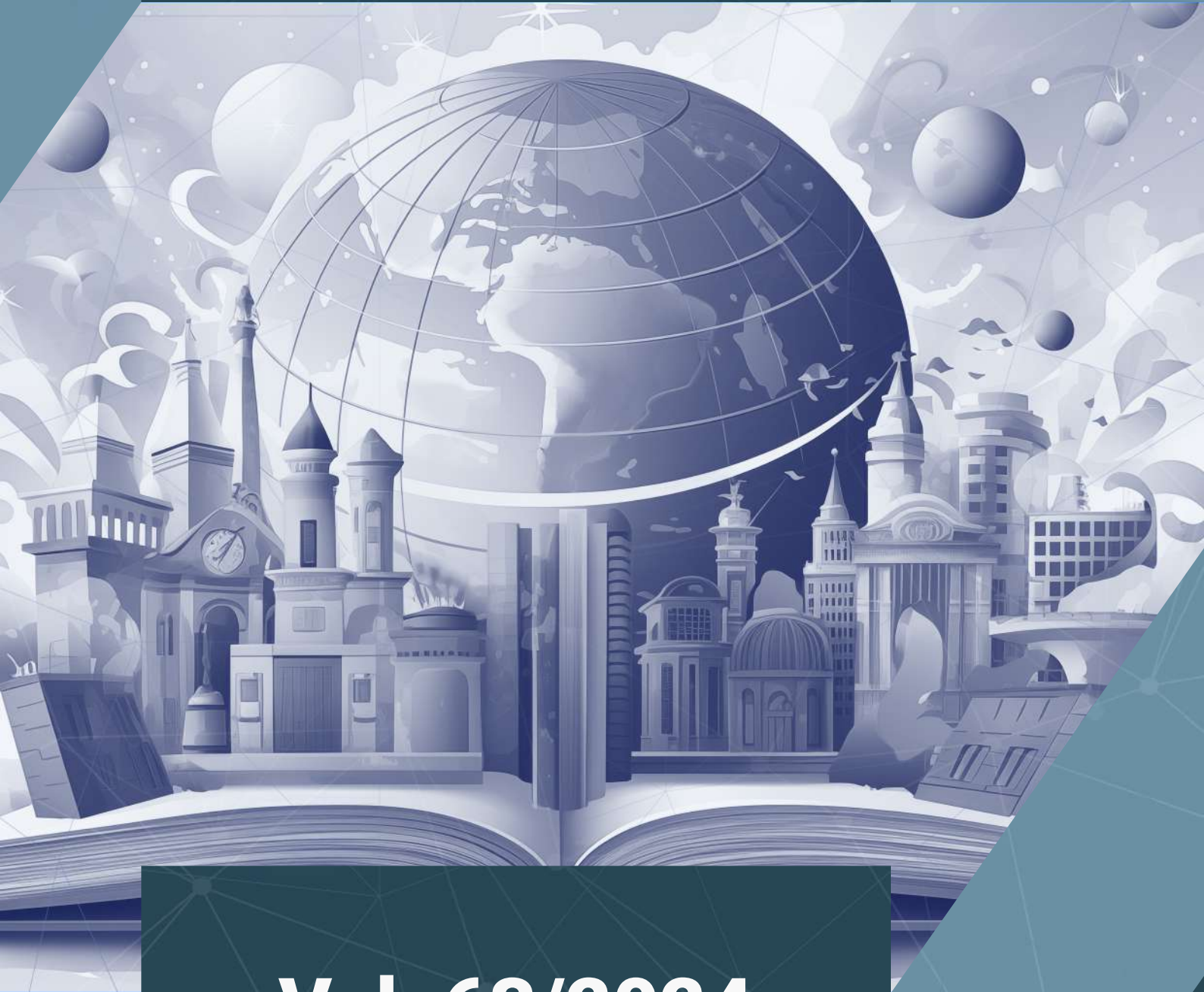




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Copyright Law Regulatory Framework for NFT collections Transactions: Origins, Controversies and Approach Exploration

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Abstract. NFT collections are the result of the convergence of blockchain and smart contract technology with a specific digital content, comprising a technology layer and a content layer. The fundamental aspect of NFT collections is the usufructuary right to the digital content. The aforementioned digital content is copyrightable, which may in turn result in the trading of NFT collections being subject to copyright laws. The sale and transfer of collections can be considered to exist along three distinct approaches of regulation: the right of distribution, the right of communication through information network, and non-infringement. It can be argued that collections are not objects of ownership. Thus, the nature of their usufruct does not unduly interfere with the proprietary style of copyright. Consequently, it could be proposed that the sale and transfer of collections cannot be subject to distribution rights regulation, either directly or by analogy. The approach of non-infringement presents significant systemic challenges in the context of legal application and fails to address the need for formalization of industry development. The sale and transfer are consistent with the constituent elements of the act communication through information network and can effectively overcome the inherent disadvantages of the aforementioned path. Therefore, it should be adopted. With regard to the additional burden of authorization created by the approach, the industry can achieve relief through the introduction of industry self-regulatory conventions or guidelines, and so on.

Keywords. NFT collections; right of distribution; right of communication through information network

1. Introduction

On 20 April 2022, the Hangzhou Internet Court issued a preliminary judgement in the case of Shenzhen Qice DieChu Culture and Creativity Co. v. Hangzhou YuanYuZhou Technology Co. The court determined that the defendant platforms were liable for contributory infringement.¹ In this case, the court of first instance determined that the sale and transfer of NFT collections constituted an infringement of the right of communication through information network, rather than an infringement on the right of distribution of the plaintiff's work. The aforementioned assertions have given rise to a number of academic discussions. Some scholars argue that, given the current status and trajectory of internet digitization technology, extending the right of distribution into cyberspace is both justifiable and necessary. They further contend

¹ See the Hangzhou Internet Court's civil judgement 2022-Zhe-0192-Min-Chu-1008.

that regulating the sale and transfer of NFT collections through the right of distribution is a viable approach.^[1-4] However, on 30 December 2022, the Hangzhou Intermediate People's Court issued a judgment of second instance. The court upheld the decision of the lower court, but only defined the publication of NFT collections on the platforms as communication through information networks. The sale and transfer are no longer considered an infringement.² This subtle change affects the systematic application of the law in such cases, raising new questions in an already complex area. In this regard, clarifying the origins and controversy foci of the aforementioned issues, exploring a reasonable approach forward for the regulation of copyright law on the trading of collections, can provide guidance for the formalized operation of the industry, which is both of sufficient theoretical and practical significance.

2. Origins: NFT collections are usufructs to a segment of digital content

What is the relationship between NFT collections transactions and the regulation of copyright law? In order to respond to the aforementioned questions, it is necessary to return to the technical foundations and the intrinsic content of NFT collections. It is essential to analyze and dismantle NFT collections from an ontological standpoint. It is only by establishing the ultimate objective of the transaction that we can establish a theoretical foundation for the resolution of the issue.

The technology layer of NFT collections: Non-fungible Tokens and their associated metadata

Non-fungible tokens (NFTs) and their associated metadata represent the technological foundation of NFT collections. NFT collections are digital assets or entities, such as images, audio, models, and so forth, that are written into smart contracts through the use of cryptographic computing technology. They are characterized by independent authentication codes and metadata. It is available for collection and circulation.³ In other words, an NFT collection can be defined as the product of minting and distributing a particular piece of digital content. Firstly, smart contracts are written and deployed to the blockchain by means of standards such as ERC-721^{4[5]}, which are responsible for defining the attributes of the data objects to be issued. These include data object categories, data object metadata standards and so on. They also define the relevant operation methods for the data objects. These include issuing, transferring and destroying, and so on.^[6] The aforementioned process is referred to as the creation of an NFT, or the minting of an NFT. Secondly, the proprietor of the NFT (the issuer) instigates a transaction on the blockchain to invoke the issuance method as outlined in the contract. The transaction contains specific metadata that aligns with the attributes of the data object as stipulated in the contract.^[6] In response to the transaction, the contract generates trusted data objects on the blockchain, deriving them from the metadata present within the transaction. This is done in accordance with the specified issuance method.^[6] The aforementioned process pertains to the issuance of NFTs, which can be defined as the process of generating NFTs on the blockchain and confirming associated rights.^[6] At this juncture, the proprietor of the NFT is empowered to transfer it to a third party. The application initiates a transaction on the blockchain, prompting the contract to execute the designated transfer method.

² See ZheJiang Province HangZhou Intermediate People's Court's civil judgement 2022-Zhe-01-Min-Zhong-5272.

³ See iResearch: *China Digital Collections Industry Research Report*, 21 September 2022.

⁴ The ERC-721 standard originated with CryptoKitties and was the first standard to represent irreplaceable digital assets. In addition to the ERC-721 standard, there are ERC-998, ERC-1155 and a number of non-EtherCat standards.

The contract responds to the transaction, verifying the ownership of the pass, and subsequently alters the ownership of the pass to the third party, contingent upon the verification.^[6] As a trusted data object generated on the blockchain, the NFT will tag specific metadata (Metadata, or data about data, is used to describe another piece of data.)^[7], which serves as its encoded ownership credentials, thereby ensuring uniqueness and specificity. Metadata comprises information such as the name, brief description, and address link of the digital content in question.^[5] At this juncture, the NFT and its associated metadata serve as the technical foundation for the authentication, utilization and distribution of NFT collection.

Content layer of NFT collections: usufructs to digital content pointed to by tokens and their associated metadata

It is erroneous to assume that the technology layer of an NFT collection exists in isolation. It is reliant on a specific digital item of content. A certificate of real estate property ownership does not directly provide the owner with the value of residing in the property; rather, it is the specific property that the certificate references that offers this benefit. Similarly, NFTs and their associated metadata are not directly accessible to NFT collection owners for purposes of collection, appreciation, and other value types, as the technology layer typically does not present digital content such as images, audio, and models in a form that can be directly utilized. It is only through the combination of the information storage and information location services provided by the NFT collection platform that the collection owner is able to access the digital content pointed to by the NFT and its associated metadata through the address links set at the technology layer, thereby achieving a certain degree of utilization. In other words, the value of the use of the collection is based on a segment of digital content stored on a designated server, and the usufruct of that segment is the essence of the value of the use of the collection. This usufruct is a further significant element of the NFT collection, namely the content layer. The transfer of ownership from the seller to the buyer is completed upon the conclusion of the transaction for the collection.^[8] Currently, the concept of usufruct has evolved beyond its traditional scope, encompassing a more social and interactive approach to gameplay. This shift has led to an expansion in the perceived value of the collection.⁶

The digital content to which the NFT and its associated metadata refer serves as the foundation for examining the regulation of copyright law in the context of NFT collection transactions. Irrespective of the technological trappings of NFT collections, the aforementioned digital content represents the external form of the collection presented to the buyer. It can be argued that the provision of digital content is a fundamental aspect of collection trading that cannot be overlooked. Digital content may be a work that is protected by copyright, or it may be information that is not protected by copyright. Therefore, in the first scenario, there is a correlation between the trading of collections and the copyright law framework. The uploading of digital content represents a reproduction of a copyrighted work, and the posting on the

⁵ Once the requisite cryptocurrency has been remitted in accordance with the stipulations of the smart contract, the purchaser's cryptocurrency wallet is duly updated with a verified hash of the pass, which encompasses a pointer to a metadata file delineating the digital content (tokenUrl), in addition to a link to the digital content itself (Url). Although digital collections cannot be wholly equated to NFT products within the aforementioned context, the transaction logic of the two is, in essence, analogous.

⁶ In China NFT collections platforms are developing additional applications for NFT collections for their registered users. The owners of NFT collections may elect to display the collection (e.g., the digital space of the Topnod platform) or utilize the collection for gaming purposes (e.g., the Lingjing space of the NFTCN platform), contingent upon their access to the specific digital content.

platforms may constitute an act of communication through information network about a copyrighted work. The question of whether the sale and transfer constitute an infringement of copyright, and which rights are infringed, is open to debate. In the second scenario, the entire process of trading collections would not be subject to the regulations set forth in copyright law⁷.

NFT collections: combining the technology layer with the content layer

The fundamental concept underlying digital collection trading is the utilization of blockchain and smart contract technology to authenticate the attribution and transactional framework governing the utilization of a specific segment of digital content. This serves as the foundation for the commercialization of the aforementioned content. In other words, the technology and content layers of an NFT collection are mutually exclusive, and together they define the essence of an NFT collection, namely the usufruct of a particular piece of digital content.

Some scholars have proposed that NFT collections (NFT digital works) lack intrinsic utilitarian value when compared to conventional digital works.^[9] Despite this, the purchaser may derive enjoyment from the NFT collection, which is largely indistinguishable from the experience of browsing the same digital work at the same resolution without the “minting” into an NFT collection. This perspective is open to significant debate. From an aerial perspective, it is evident that the utilization of digital content encompasses not only appreciation, but also extends beyond this. The utilization of the collection on an NFT collection platform and the dissemination of the digital content underlying the collection represent a form of value that is not typically accessible through the acquisition of general digital works, such as e-books and online films. This is where the distinction is made. It is therefore evident that the use and exchange value of NFT collections should be considered of significant importance when formulating trading rules.

It is important to note that the term “NFT collections” cannot be simply equated with the “NFT”, rather, it refers to the technology and content layers combined as a whole. Some foreign scholars posit that an NFT is not an unauthorized copy or derivative work of the underlying work, and thus is not subject to copyright infringement claims.^[10] It is acknowledged that NFTs are merely encodings validated by the blockchain consensus mechanism and typically do not contain digital content directly. However, it should be noted that NFTs are not merely tokens; they also comprise a content layer that is specifically associated with the token in question. In double contexts, NFT is divided into two distinct senses. If the two are conflated, there is a risk of confusion, whereby a change in the ownership of the token may be perceived as a transaction, with the usufruct of the digital content between the two parties being overlooked. It can be reasonably deduced that a digital collection is approximately equivalent to an NFT collection.⁸ However, neither can be considered to be equivalent to NFT as a token.

3. Controversies: Regulatory Approaches for the Sale and Transfer of NFT collections

Previously, the sale and transfer of NFT collections that infringed the rights of distribution or communication through information network represented the primary focus of

⁷ For the sake of simplicity in presentation, all references to digital collections in the following text pertain to the first scenario.

⁸ There are notable distinctions between NFT collections and NFT products with regard to their respective market exploration, underlying technical infrastructure, issuance methods, and endorsement mechanisms. See iResearch: *China Digital Collections Industry Research Report*, 21 September 2022.

academic and practical debate. This was exemplified by the “Fat Tiger case”, which was adopted in the initial trial. The adoption of a new approach in the second instance does not constitute infringement. This view challenges the previous binary cross-examination, which was a subject of considerable debate, but its merits remain to be seen.

Sale and transfer of NFT collections should not be subject to the approach of the right of distribution regulation

The right of distribution is typically applied to regulate the unauthorized circulation of tangible carriers of works. The rationale behind extending the right of distribution to encompass NFT collections is to safeguard the purchaser’s interests in the secondary market.^[3] This is achieved by invoking the first sale doctrine, which prevents the arbitrary hindrance of legally acquired collections through transaction contracts. The first sale doctrine (exhaustion of the right of distribution) is designed to reconcile the dual significance of the sale of a tangible object in which a work has been fixed to the public with the act of distribution under copyright law and the act of disposing of ownership under civil law. Furthermore, it aims to prevent undue interference with ownership by copyright.^[9] Nevertheless, NFT collections are property in virtual form on the Internet, a fact that has been repeatedly acknowledged in our judicial practice.^[11] Despite the assertion by some within the industry of the viability of an in-rem theory of NFT collection,^[12] this remains unsupported by the principle of *res judicata*.⁹ It follows that the sale and transfer of NFT collections cannot be regulated by the right of distribution, given the difficulty of reconciling this with existing practice.

The concept of a “network virtual property” does not accurately reflect the nature of ownership in the context of a NFT collection. The essence of the aforementioned interest is the usufruct of a specific segment of digital content, namely the body of the collection. The question of whether there is an “undue interference of copyright with ownership” in such interests provides the basis for determining whether the right of distribution and the first sale doctrine can be applied by analogy. The author presents an alternative perspective, arguing that the interest in question exhibits characteristics that are both less controlling than those associated with ownership and more tangible than those typically associated with ownership. The continued existence of a collection is contingent upon the platform’s ability to provide services on a long-term and stable basis. This is a consequence of the centralization of collection control rights when the federation chain is employed as the underlying technology. Conversely, the survival of a book or a CD is no longer contingent upon the original publisher. It is evident that this interest is less controlling than ownership. The use value of the collection is not limited to personal appreciation; it also encompasses scenarios of sharing and reuse, which pertain to the communication of digital works through information networks. These scenarios may include the arrangement of a virtual showroom or the creation of a meta-universe space within the community built by the platform. The legitimacy of such acts is contingent upon the maker’s entitlement or authorization to perform the act in question, which then elevates it to a component of usufruct. In other words, copyright law only justifiably interferes with such usufruct, and only to the extent that a license is in place. It is not necessary to reconcile the two in the context of physical goods, and the platform can also prevent registered users from over-utilizing the collection on the platform by technical means. It thus follows that the approach of regulating

⁹ Additionally, UK case law has established that NFT products are considered property, thereby enabling victims to freeze their misappropriated NFTs. Nevertheless, it is as yet unclear what rights victims have over NFT products and whether NFT products can be aligned with the majority of the regulations pertaining to property rights. See *Osbourne v Persons Unknown & Anor* [2022] EWHC 1021.

through the right of distribution cannot be applied analogously to the sale and transfer of NFT collections either.

The non-infringement approach should not apply to the sale and transfer of NFT collections

The approach of non-infringement presents a series of systemic challenges in the context of legal application. Furthermore, it is not conducive to the extension of the rule of *res judicata* to analogous cases.

It would be erroneous to assume that the conclusion that uploading and publishing infringes on the right of communication through information network is universally accepted. The essence of uploading and publishing is to offer the digital content behind the collection for sale. This involves uploading thumbnails and snapshots of the collection to the platform's designated servers and then making the content available to web users. The aim of this process is to showcase the basic conditions of the collection. This is not fundamentally different from the general e-commerce platforms that include illustrations and brief descriptions on the sales page of the goods. It is necessary to examine whether there is any substantial substitution between the thumbnails and snapshots and the original works, and whether they affect the normal use of the relevant works and jeopardies the legitimate interests of the right holders, regardless of whether or not the thumbnails and snapshots themselves are infringing.^[13] In other words, the conclusion that uploading and publishing infringes on the right of communication through information networks is not *ipso facto* valid. While substantial substitution between photographic works and thumbnails and snapshots is relatively straightforward to prove, audiovisual and musical works will face a dilemma in determining the right of communication information network. In the event of an NFT collection being sold in a blind box; it is not possible for the work to be made available to the public via the uploading and publishing.

Secondly, the set of rules established in the "Fat Tiger case" placed significant emphasis on the finding that the posting on the platforms infringed upon the right of communication through information network. In the event that the aforementioned conclusion is not established, the precedential value of the "Fat Tiger case" on the NFT collection platform will be significantly diminished. The case will no longer serve as a guiding principle for similar cases and the formalization of the industry's operations. The court in question applied the "higher duty of care" standard on the basis that the platform derived a direct financial benefit from the infringement of the right of communication through information network by the network user.¹⁰ A review of the case files reveals that the defendant platform levied fees and commissions at two distinct stages: the initial uploading and posting stage and the subsequent selling and transferring stage. Both of these stages align with the criteria for direct financial gain.¹¹ Nevertheless, in the absence of an infringement, the question of whether the posting infringes the right of communication through information network remains unresolved, thereby minting doubt on the applicability of the law in this case. Should the NFT collection of "Fat Tiger Vaccination" be transformed into a blind box sale, the purchaser would be unable to access the digital content prior to acquiring the collection. This would remain the case even in the absence of any further alterations to the conditions. Consequently, the transaction as a whole

¹⁰ See Article 11 of the Provisions of the Supreme People's Court on Several Issues Concerning the Application of Law to the Trial of Civil Disputation Involving Infringement of the Right of Communication through Information Network.

¹¹ See ZheJiang Province HangZhou Intermediate People's Court's civil judgement 2022-Zhe-01-Min-Zhong-5272.

would not constitute an infringement on the right of communication through an information network. Nevertheless, this does not signify that the obligation of the platform to conduct a prior review should also be revoked. In effect, copyright owners are precluded from utilizing this avenue for the sale of digital works, and the aforementioned damages are not encompassed by uploading and publishing. It would be erroneous to assume that the absence of infringement or non-infringement of the thumbnails and snapshots in question necessitates the overturning of the “Fat Tiger case” in order to establish a system of prior review obligations. Such an approach would not be conducive to guiding the formalized development of the industry through judicial decisions, nor would it be conducive to maintaining the systematic application of the law.

Ultimately, there is no legal rationale for the assertion that the sale and transfer do not contravene the right of communication through information networks. In response to the aforementioned question, the second trial of the “Fat Tiger case” stated that the public may access the work at their own discretion, either through online browsing, which is not contingent on assignment, or by downloading, browsing, and so forth after online assignment.¹² The rationale behind the standard is open to question. It is necessary to define the term “transferee” in order to proceed. This element is devoid of any basis in existing legislation and is not traceable to any discernible legislative source. If the term “transferee” is understood to refer to a tangible carrier, then both posting and sale and transfer would satisfy the criteria and would be inconsistent with the conclusion. If the term “transferee” is to be understood as referring to an intangible carrier, it would appear that the same standard should be applied in the case of paid access to digital works in general, such as the acquisition of e-books and online movies. This would have the effect of making it difficult to interpret the term “transferee” and to integrate it into the existing system of judging the behavior of communication through information networks. It seems plausible to suggest that the term “transferee” is intended to refer to the NFT collection as a virtual property on the Internet. Consequently, since the collection cannot be considered to fall within the category of “online browsing not conditional on the transferee”, its sale and transfer does not constitute an infringement of the right of communication through information networks. Nevertheless, this interpretation would suggest that the role of the “transferee” element is merely to exclude the sale or transfer from the scope of communication through information networks. The author hypothesizes that this practice may be intended to facilitate the seamless circulation of the collectable. However, it inevitably deviates from the extant regulatory framework.

In conclusion, the approach of non-infringement of sale and transfer is excessively reliant on the assumption that posting on the aforementioned platforms constitutes an infringement of the right of communication through information network. Furthermore, this assumption cannot be substantiated by reference to the extant rules and regulations, and thus should not be applied.

4. Approach Exploration: Regulation of the right of communication through information networks for the sale and transfer of NFT collections

Copyright law regulatory framework for the sale and transfer of NFT collections must consider the systemic nature of the application of the law and the direction of the development of the industry. The regulatory approach of the right of communication through information

¹² See ZheJiang Province HangZhou Intermediate People’s Court’s civil judgement 2022-Zhe-01-Min-Zhong-5272.

networks can facilitate the aforementioned considerations. While the approach presents a number of derivative challenges, there are a number of reasonable ways to overcome them.

The Evidence of approach for the Regulation of the Right of communication through Information Network

The question of whether the sale is intended for the “public” is a challenging one to answer, as it is a key factor in determining whether the sale infringes on the right of communication through information network. The transaction of NFT collections is dependent on Internet digitization technology, with the result that the buyer acquires the usufruct of a specific digital content item, thus satisfying the requirement of making the work available by wired or wireless means. Nevertheless, the transaction appears to be a one-to-one exchange between the seller and the buyer, with no indication that it is open to other parties. Some scholars have also described trading as a “superficial act of communication through an information network.”^[9] The author posits that the preceding view can be refuted on the basis of historical and systemic explanations. Upon returning to the legislative source of the right of communication through information networks, specifically Article 8 of *the WIPO Copyright Treaty* on the right of making available to the public, a discrepancy in the formulation of the term “the public” is evident. At the providing stage, the term is used, whereas at the access stage, the term “members of the public” is employed. The access phase is referred to as “members of the public”, which clearly delineates the scope in a manner that does not necessitate that the actual audience be the public in its entirety or in the plural. Moreover, the *Chinese Copyright Law* also employs the term “the public” in its provisions on the right of distribution, indicating that the provision of a tangible work carrier will not be excluded. In light of the aforementioned considerations, it can be posited that with regard to the sale and transfer of NFT collections, the public is to be understood as belonging to the category of subjects who may acquire works through the purchase of such items. The eventual buyer, in turn, is to be regarded as a member of the public at the access stage, and thus as a potential audience in accordance with the legislative framework.

The regulation of the sale and transfer of rights of communication through information networks can be informed by an understanding of the systemic nature of the application of the law and the orientation of the development of the industry. From the aforementioned analysis, it is evident that the infringement on the right of communication through information network constitutes the basis for the court to impose the obligation of prior censorship of NFT collection platforms. If it is determined that the sale and transfer of rights of communication through information networks are in violation of the law, the legal framework established in the “Fat Tiger Case” can be effectively applied to similar cases, thereby providing more stable and certain behavioral guidelines for the development of the industry. In the latter half of 2022, the NFT collections industry underwent a significant correction.^[14] Once the unregulated expansion of the industry has reached a point of equilibrium, the guidance provided by typical cases will, in all likelihood, prove to be of significant utility.

The relief of dilemmas in the regulation of the right of communication through information network

The regulation of the right of communication through information networks may result in an increase in the administrative burden associated with authorizing the sale of transfers. However, this is not an insurmountable challenge. In comparison to the regulatory framework governing the right of distribution and non-infringement, the regulation of communication through information networks entails the imposition of more rigorous requirements on the contractual agreement between NFT collection founders and copyright owners. To illustrate,

should an artist elect to sell an entire musical album to a purchaser as an NFT product, the contract between the artist and the purchaser will stipulate the extent of the consumer's rights to the album.^[15] In the event that the license agreement between the creator of an NFT collection and the copyright owner is ambiguous or limited to the legalization of the first sale, the copyright owner may have grounds to claim that the circulation of the NFT collection on the secondary market should be restricted. Similarly, in the event that the digital content forming the basis of an NFT collection is not licensed for sharing and reuse (for example, if it is used in a virtual space provided by a platform to set up a showroom), the owner of the collection may be held accountable for infringement when exploiting the collection in question.

In order to address the aforementioned issues and simultaneously enhance the clarity of the rights enjoyed by owners of NFT collections,^[16] it is this author's view that it may be possible to introduce industry self-regulatory conventions or guidelines to provide model licensing contracts between makers and copyright owners, or standards for the distribution of NFT collections. This approach, based on the principle of disposition, not only permits the copyright owner to contractually relinquish control over the digital work, but also enables the purchaser to have a transparent understanding of how they will consume the collection they intend to acquire, thus enabling them to "achieve two objectives with one action". The self-regulatory development of the NFT collections industry is currently in a state of rapid advancement. This is evidenced by the existence of several notable initiatives and conventions, including *the Initiative on Self-Regulatory Development of the NFT collections Industry*, which is spearheaded by the China Cultural Industry Association, *the Self-Regulatory Convention of the Digital Literature and Creativity Industry*, which is led by the National Alliance of Copyright Trading Centers, and the industry self-regulatory conventions or guidelines, such as *the Guidelines on Compliance Operation for Issuing NFT collections*, which were prepared by the Blockchain Professional Committee of Guangdong Internet Association and Guangdong Zhongke Intelligent Blockchain Technology Co. Ltd. and Taihetai (Guangzhou) Law Firm are the responsible compilers. Industry self-regulatory conventions or guidelines have been introduced on an ongoing basis. As the NFT collections industry gradually moves towards formalization, it is evident that the aforementioned countermeasures will become a reality.

5. Conclusion

The long-term positive development of the NFT collections market is contingent upon the copyright system's capacity to provide a trading order guarantee. In response to copyright infringement disputes arising from NFT collections transactions, the adoption of preventive and remedial measures can facilitate the transformation of the NFT collections industry from a state of unregulated and unethical growth to one that is properly regulated, while simultaneously eliminating the negative externalities caused by unlawful behavior. This paper addresses the regulation of copyright law on NFT collections transactions, with a particular focus on the illicit use of copyrighted works in the NFT collections market. It aims to identify the root causes of the aforementioned issues, address the controversies surrounding them, and then explore a regulatory approach that takes into account the interests of all parties and the development trend of the industry.

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