

Property Rights and Regulatory Rules of Blockchain Native Digital Assets NFT Digital Collections: Starting from the First Case of “Pang Hu Receives Vaccination”

Xiaoyu Yu^{1,a,*}, Yihuan Mao^{1,b}

¹*School of Law, Huaiyin Normal University, Huaihai Street, Huai'an City, China*
a. 3139263365@qq.com, b. Eunice200511@outlook.com

**corresponding author*

Abstract: With the application of blockchain technology, blockchain native digital assets represented by NFT have emerged. However, contrasting with its broad development prospects, Chinese law does not directly specify the property attributes and transaction nature of NFTs, and judicial practices are not unified. The judgment of the first case of "Pang Hu Receives Vaccination" NFT in 2022 sparked discussions on a series of legal issues related to NFT works. Legal uncertainty has become the greatest obstacle in the NFT trading market. The uniqueness and exclusive control features of NFTs align with property rights attributes. Therefore, existing blockchain native digital assets NFTs should be attributed to property objects, clarifying the regulatory rights under the trading of NFT digital collections, promoting the construction of a healthy market for blockchain native digital assets, and addressing subsequent issues such as bankruptcy and trust.

Keywords: NFT, property rights attributes, transaction regulations

1. Introduction

In April 2022, the Hangzhou Internet Court made a first-instance judgment in China's first NFT infringement case. The court recognized NFTs as unique "digital goods" whose transaction essence is the transfer of ownership, with the rights enjoyed by NFT holders equivalent to those of property rights holders, affirming the transactional nature of NFT digital works and the ownership powers similar to property rights [1]. However, the court negated the transactional behavior, ultimately characterizing it as an act of information network dissemination. The Hangzhou Intermediate People's Court upheld this viewpoint in the second instance [2]. This raises the question: in the same judgment, without truly clarifying the related legal issues, should NFT transactions be classified as property transactions or information network dissemination, and how should NFT digital collectibles be defined?

2. Legitimacy of Blockchain Native Digital Assets NFTs

In China, due to strict regulatory policies, digital collectibles have become one of the main application areas of NFT technology.

NFT stands for Non-Fungible Token, including non-fungibility and token aspects. Tokens refer to the tokenized form of assets, typically homogeneous tokens like securities tokens and utility tokens

[3]. Conversely, NFTs are digital proof of rights with scarcity, which cannot be divided, swapped, tampered with, or replicated.

The property protected by criminal law has the characteristics of management possibility, transfer possibility, and objective value, which are consistent with the characteristics of property in civil law [4]. First, in the transaction of NFT digital collectibles, data blocks are connected and jointly store information, with decentralized technology protected by encryption ensuring the stability of data on the chain [5], preventing malicious tampering. For NFT digital collectibles, the registration behavior of the blockchain and the hash value identifier mapping the non-fungibility is the key to its materialization [6]. Thus, NFT digital collectibles have management possibilities. Secondly, NFTs are digital assets with transferability based on blockchain, capable of free trading to achieve ownership transfer. Finally, as virtual property, NFTs' potential economic value brings vitality to the digital market. The clear ownership and scarcity of NFT digital collectibles make them not only valuable as art but also expand future digital investment and trading markets, indicating their objective value.

In summary, NFTs meet the characteristics of property and should be recognized as legal property by law. Currently, the Chinese legal community classifies NFT works as virtual property, implying that under Article 127 of the Civil Code, NFT digital collectibles should be presumed to have the attributes of legal property.

3. Legal Attributes of Blockchain Native Digital Assets NFTs

3.1. Application in the Property-Debt Dichotomy System

Both domestic and foreign research has been conducted on the legal attributes of NFT digital collectibles. Foreign scholars like Joshua Fairfield have conducted in-depth studies on the ownership attributes of NFTs as "unique digital assets," asserting that NFT issuers promise buyers can create "tokenized proof of ownership" for NFTs and their underlying assets during sales, meaning NFT transactions imply ownership transfer [7]. Currently, in China's dichotomy of property and obligation, the domestic academic community primarily holds two mainstream views on the legal attributes of NFT digital collectibles: "property rights theory" and "obligation rights theory," while the "emerging rights theory" legislative theory [8] remains debatable, especially in the era of the Civil Code, where Chinese civil law research has shifted from legislative to interpretative orientation [9]. The critical issue is how blockchain native digital assets (NFTs) can be better applied under the dichotomy of property and obligation.

The "property rights theory" posits that blockchain assets are essentially commodities, can be controlled and dominated by specific subjects, are exclusive, have typical property content, and conform to the composition of property objects [5]. Additionally, there is the "property object theory" [10]. Yang Lixin points out that the legal attribute of virtual property on the internet is a special existence form of objects in the digital age, possessing legal exclusivity and economic value [11]. The "obligation rights theory" indicates that the on-chain and minting stages of NFT digital collectibles rely on computer technology to map the unique hash value to the blockchain, encrypting and assigning token IDs and ownership records. The owner of NFT digital collectibles establishes a network technical service contract relationship with the trading platform, with the owner realizing rights changes based on the contract with the platform as the obligor. User rights are limited by the network service provider; meanwhile, the platform's technical service is a continuous supply behavior, conforming to the characteristics of obligation objects, so the right belongs to obligation rights [12].

Thus, blockchain digital assets (NFTs) should be viewed as legal property protected by law, but their status within the property rights system of the Civil Code remains undecided [5]. The above is based on recognizing blockchain digital assets (NFTs) as virtual currency assets, acknowledging their

legality under Article 127 of the Civil Code. In the judgment of the "Fat Tiger Getting Vaccinated" case, the court identified NFT digital collectibles as virtual property, which should be included in the category of property rights protected by civil law, allowing rights holders to possess, control, and use them, but they are different from property rights, obligation rights, and intellectual property rights as special objects [1,2]. Thus, in this case, the judge affirmed the "virtual property theory."

Indeed, the two are not contradictory. Blockchain-created digital assets (NFTs) are virtual property and belong to objects. The concept of objects is derivative, so modern civil law incorporates such data, network virtual property, and other non-natural objects without physical carriers into the system of objects [13].

3.2. Manifestation of Property Rights in Native Digital Assets NFTs

As mentioned above, under the current civil legal system, blockchain digital assets are protected legal property and can be objects of property rights, with asset owners enjoying the rights of possession, use, income, and disposal.

Property rights have two main characteristics: first, the object characteristic of property rights refers to specific objects that are physically distinct from other objects and can be independently traded and transferred; second, the content characteristic of property rights refers to the rights holders' direct control and exclusive rights over specific objects [14].

The property attributes of native digital assets (NFTs) mainly manifest in the following two aspects: first, NFT digital collectibles have "specificity." As blockchain native digital assets, NFTs are assigned unique tokens to each digital work; second, NFT digital works have the "exclusivity" of property rights, meaning users can exert exclusive control over specific digital assets through "private keys." Specifically, although rights holders cannot achieve direct and real possession and control over NFT digital collectibles, they can exclusively manage and control them through private keys, which is absolute and unaffected by others' will.

In summary, blockchain native digital assets (NFTs) should be incorporated into the property rights protection system. Based on the typical trading mode of NFT digital collectibles in China, their essence is to change registration through smart contracts to form new proof of ownership, thus causing property rights changes and publicizing new ownership subjects [15]. Therefore, classifying them into the property rights system meets social trading needs.

4. Regulatory Framework for Transactions of Native Digital Assets NFTs

4.1. Copyright Protection for NFT-based Works

In January 2024, the transaction volume of the NFT market reached 1.28 billion US dollars, an increase of 35.3% year-on-year [16]. At the same time, under the dynamic development trend of China's digital economy, the digital collectibles market has broad prospects, with an estimated market size exceeding 30 billion yuan by 2028 [17]. However, behind the booming NFT digital collectibles transactions lies the conflict of rights and obligations.

China's digital collectibles can be roughly divided into three categories: original content type, traditional culture empowerment type, and integration with the real industry type [18]. Currently, the mainstream view in domestic and foreign academia recognizes the intellectual property attributes of digital collectibles, while the latter two types of digital collectibles usually do not involve intellectual property infringement issues. However, digital collectibles with digital artworks as underlying assets meet the characteristics of copyright objects [19]. In the "Fat Tiger Getting Vaccinated" case, the premise for determining joint infringement liability of a technology company was the platform user stealing a series of illustrations related to the transfer of copyright from the writer Ma Qianli and Qice

Company, minting them as NFTs signed in their own name and selling them. Thus, copyright protection for original content-type digital collectibles should be emphasized.

As mentioned above, NFT digital collectibles should be considered legal property, but this attribute's establishment should not involve rights disputes.

4.2. Responsibility Boundaries of Trading Platforms in NFT Models

According to the Supreme People's Court's provisions on information network dissemination rights, in the "Fat Tiger Getting Vaccinated" case, from the Bigverse platform's profit model, the minter needs to pay a "Gas fee" before minting their work into an NFT for sale, and the platform takes a certain percentage of commission after the transaction. Therefore, as a network service provider, the trading platform should have a high duty of care.

During minting, the platform should conduct an internal review mechanism to ensure that the work does not infringe on rights before issuance; during the transaction, the platform should optimize smart contracts continuously to ensure open and transparent transactions, protecting the legitimate rights and interests of both parties.

4.3. Ownership Rights of NFT Owners

Owners, after purchasing their desired NFT digital collectibles through a trading platform, enjoy the rights of possession, use, income, and disposal.

NFTs, based on blockchain technology, have controllability. Although owners cannot physically control them, it is equivalent to rights such as pledge of rights and spatial utilization rights, which do not require physical control. Property rights are not limited to physical meaning. Owners can exclusively and absolutely control specific digital assets through private keys [20], and metadata in smart contracts links specific token IDs to digital assets.

Currently, the usage rights of NFT digital collectibles are not clearly applied and embodied. NFT digital collectibles are mainly used for promotional purposes, serving as promotional effects or display of collectible value. However, with the continuous development of the digital collectibles industry, the improvement of qualification review standards for digital collectible platforms, and the gradual expansion and opening of the issuance market, NFT digital collectibles can also play an active role in intellectual property protection. In the past, the ease of copying digital works not only brought about intellectual property disputes but also hindered market development due to the lack of credit endorsement. The emergence of NFT technology will promote the rapid development of the online transaction market and more applications of NFT digital collectibles in various fields.

Owners currently mainly realize the rights of income and disposal through sales. Buyers particularly value the collectible value and future development potential of NFTs. Incorporating NFT digital collectibles into a mature property rights system can effectively prevent transaction risks brought by blockchain digital assets, including bankruptcy, trust, and guarantee.

5. Conclusion

This paper analyzes the legality, applicability under the bifurcation system of digital debt, and property rights attributes of blockchain-native digital assets, specifically NFTs, achieving the initial vision of virtual property. Granting NFT digital collectibles property rights attributes not only aligns with their intrinsic characteristics but also facilitates the transfer of property rights in digital assets. This dual approach not only provides pathways for legal remedies but also presents opportunities for the development of digital markets. With the advancement of blockchain technology, a blended digital ecosystem—metaverse—where reality and virtuality coexist, is becoming feasible. While there is currently no consensus on the concept of the metaverse, unified digital identities, valid

property, and economic systems should constitute its essential framework. Within the existing legal framework, endowing native digital assets represented by NFT digital collectibles with certain property rights attributes provides valuable insights for comprehensive digital development in the future.

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