

Research on Property Right Protection of Virtual Property

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Abstract

The protection of virtual property under the property rights system is predicated on the establishment of its property rights attributes and can be achieved through the application of property rights rules. Although Chinese law has not explicitly defined its legal attributes, it has indirectly recognized the property rights status of virtual property through declaratory provisions, enabling it to be protected under the principles of property rights. However, applying property rights rules to protect virtual property, while broadening the scope of protection, also brings certain application confusions. If virtual property is included in the category of property rights, it is necessary to first clarify its ownership subject before further discussing the issue of ownership after property rights changes. In addition, determining the price of virtual property during the process of property rights changes has also become a key difficulty in transactions. At the same time, the subjective tendencies of network service providers in value assessment are not conducive to the effective realization of property rights protection for virtual property.

Keywords

Virtual Property; Property Rights Protection; Ownership; Standard Terms; Value Assessment.

1. The Connotation of Virtual Property Protection in China

1.1. Definition of Virtual Property

According to legal logic theory, the process of defining a concept involves three key steps: identifying essential characteristics, determining genus concepts, establishing differentia, and formulating definitions. For virtual property, its essential characteristic is intangible assets, with the genus concept being "items" and the differentia being its reliance on computer code to connect with the real world. Therefore, virtual property can be defined as items requiring computer code to establish connections with physical society. Article 127 of China's Civil Code (hereinafter referred to as the "Civil Code") first recognized its property attributes at the fundamental legal level, providing an open framework for judicial practice and subsequent legislation. Guided by this legislative spirit, numerous Chinese scholars have conducted in-depth research and definitions of virtual property. Professor Yu Zhigang argues that virtual property constitutes a new form of property, having expanded from the virtual cyberspace to the real world, significantly challenging traditional theories. [1] Professor Yang Lixin defines virtual property as a novel asset whose value can be measured by existing standards and exists in cyberspace. [2] Professor Liu Huirong suggests it includes both network-based virtual objects and other property rights that are controlled, owned, and possess value in cyberspace. [3] In summary, the property attributes of virtual property have been widely acknowledged by scholars, with ongoing efforts to establish its legal status.

1.2. Legal Attributes of Virtual Property

As for the legal nature of virtual property, there are different views in Chinese academia. With the implementation of the Civil Code, it is mainly divided into the theory of property right and the theory of creditor's right.

1.2.1. The Theory of Property Rights

In Chinese legal theory, property rights are characterized by three key attributes: dominion, specificity, and exclusivity. When an object meets these criteria, it naturally qualifies as a property right. Firstly, dominion allows property right holders to exercise authority directly. Network users can maintain control over virtual property through legally defined rights and obligations, differing from traditional "de facto control" as it establishes a rights-obligation relationship.[4] This means that even without physical possession, property right holders retain legal authority to make decisions affecting the object. Thus, virtual property is directly controlled by users through "rights-based connections." Secondly, specificity refers to virtual property existing as distinct information carriers in cyberspace. Network operators and users can manage virtual assets through service agreements and technical means, aligning with societal expectations of specificity.[5] Finally, exclusivity grants property right holders sole ownership without interference. Although virtual property management relies on digital platforms and ownership transfers to service providers when users leave, this doesn't equate to ownership. Users retain control over property creation and modification, and can reclaim virtual assets if rights are violated. Therefore, virtual property inherently possesses exclusivity. In conclusion, virtual property should be classified as a property right.

1.2.2. The Claim Theory

The theory of creditor's rights can be divided into the theory of creditor's object and the theory of creditor's instrument, which hold different understandings of the nature of virtual property. On one hand, the theory of creditor's object posits that the rights of internet users over virtual property are creditor's rights arising from service contracts. When users access or first enter a network platform, they must sign a contract with the platform's service provider, known as the "notice and declaration" agreement. Both parties' rights and obligations are based on this contract. If one party breaches the agreement, the other party has the right to claim damages. On the other hand, the theory of creditor's instrument treats virtual property as a document for users to assert claims, which itself does not possess definite rights or interests. Compared to property rights, creditor's rights are a type of claim right and relative right. Virtual property requires assistance from the service provider for disposal, making it a claim right. Additionally, when users suffer damages, they should seek compensation from the service provider based on the service contract, adhering to the principle of relativity in creditor's rights, thus qualifying as creditor's rights.

Virtual property demonstrates distinct characteristics of property rights compared to creditor's rights, making it more suitable for property-based protection mechanisms. This alignment stems from two fundamental reasons. First, the absolute control over virtual assets by internet users. Academic consensus defines control as the unilateral realization of intent without requiring third-party collaboration. [6] Online users freely dispose of virtual assets according to personal preferences, create digital content, and invest time and effort in acquiring diverse virtual assets – all of which align with the control principle of physical property. In contrast, internet service providers (ISPs) only manage platform operations and lack direct control over virtual assets. Recent lawsuits against ISPs for disposing of users' virtual assets, such as the Lin Mou case, have become increasingly common.[7] Second, the principle of creditor's rights' relativity hinders user protection. When third parties damage virtual assets, contractual remedies alone cannot provide adequate compensation, leaving users' property

security inadequately protected. Therefore, recognizing virtual property as a subject of property rights better safeguards users' digital assets.

2. The Current Situation and Problems of Virtual Property Protection in China

2.1. The Current Situation of Virtual Property Protection in China

2.1.1. Provisions of the Code on Referral

Article 127 of the Civil Code's referral clause stipulates that where laws provide for the protection of data and virtual property, such provisions shall apply. This provision inherits Article 127 of the General Principles of the Civil Law of the People's Republic of China (hereinafter "the Civil Law General Principles"), representing a compromise solution to academic disputes.[8]The legislative process regarding virtual property underwent three revisions. The first amendment designated virtual property as an object of real rights in the initial draft, which sparked fierce opposition from scholars opposing the real rights theory. The second amendment removed protection clauses for virtual property, yet this proved inadequate for safeguarding this newly emerging property right. The third amendment introduced a declaratory provision in the final draft, sidestepping the debate over virtual property's legal status and solely recognizing its property right attributes. This third revision was ultimately adopted and codified as Article 127 of the Civil Code. In summary, while Chinese legislators initially recognized virtual property as an object of real rights, they had to adopt a provisional approach due to ongoing disputes over the legal nature of virtual property.

However, under China's statutory principle of property rights, all such rights must be explicitly defined by law. The Civil Code's Article 127 previously established clear classifications of property rights, including Articles 109-126 which delineate personal rights and property rights (covering real rights, creditor's rights, intellectual property rights, etc.). Following the legislative convention of listing categories with a catch-all provision, all civil rights in this chapter were comprehensively addressed. This raises the question: Why was a separate referral clause introduced after these provisions, without including virtual property within the real rights classification?[9]This suggests that Chinese legislators intended to allow virtual property rights to be protected by other relevant laws-such as the Cybersecurity Data Protection Regulations-while their legal status remains undefined.

2.1.2. Break through the Customary Rules of Real Right According to the Principle of Legal Real Right

During the formulation of China's Property Rights Law, the legal framework established the categories and content of property rights. However, advancements in technology and the virtual economy have prompted scholars to propose expanded interpretations of statutory property rights. Professor Wang Liming, for instance, suggested that any new security form created by parties and publicly disclosed through established disclosure methods could be recognized as a security interest.[10]The concept of customary property rights was developed by Chinese scholars based on Taiwan's Civil Code provision that "property rights may not be created except by law or custom." [11]This concept helps adapt to rapid social development and fills gaps in property rights principles. Notably, China's Civil Code recognizes negotiable instruments, warehouse receipts, and bills of lading as collateralizable assets, implicitly acknowledging customary property rights. Such recognition may also apply in specialized industries. Although China has not formally legislated customary property rights, judicial practices have already seen rulings respecting virtual property transaction conventions and industry norms, creating a foundation for their recognition as virtual property. For example, in a case involving stolen virtual assets from an online game, the court determined compensation

not solely by the operator's initial pricing but by referencing market prices of in-game items within player communities. This adoption of industry-specific "customs" effectively complements statutory property rights in dispute resolution, accumulating practical experience for establishing mature virtual property regulations through judicial practice.

2.2. The Dilemma of Virtual Property Protection in China

Based on the object theory of property right, the protection of virtual property involves three aspects: ownership subject, the application of standard clauses in the transaction process and value evaluation.

2.2.1. Unclear Ownership

Most current cases concerning virtual property in China revolve around "theft" and "fraud" charges, requiring defendants to compensate for losses or return the property.[12]In 2015, Peng sued Zhu to determine store ownership and seek compensation, ultimately winning the case.[13]This case established that the ownership of virtual property belongs to internet users, not third-party infringers. That same year, the Shanghai First Intermediate People's Court introduced the concept of "ownership of in-game items" in its rulings.[14]However, in a case involving Guangzhou Zhongyin Color Digital Technology Co., Ltd., the court ruled that virtual property belongs to employers rather than internet users.[15]Therefore, ownership of virtual property involves two parties: internet users and internet service providers.

However, the ownership of virtual property remains ambiguous and difficult to determine. First, if network users are recognized as the owners of virtual property, the design, programming, and operational costs borne by network service providers would be overlooked. Moreover, from a general perspective, network users do not fully possess ownership rights-they still require assistance from service providers to dispose of virtual assets. They are not true owners but merely users. Second, if network service providers are designated as owners, the time and money invested by users become inexplicable-how could someone purchase virtual property with their own money and then gift it to others? Finally, when dividing ownership rights, both users and providers hold separate claims. Some scholars propose a phased approach: service providers retain ownership during the initial creation phase, while users gain ownership after circulation.[16]However, current Chinese law lacks provisions addressing this issue, and judicial rulings often rely on existing cases, making it difficult to determine ownership. Therefore, establishing clear legal ownership is urgently needed.

2.2.2. The Standard Terms are Manifestly Unfair

Standard terms are pre-drafted clauses that parties use repeatedly without negotiating during contract formation. These clauses become invalid when unreasonably exempting the party from liability or imposing excessive burdens on the other party. In virtual networks, the application of standard terms is particularly unfair, especially regarding the acquisition and inheritance of virtual property rights, which unjustly deprive users of their legitimate entitlements. Specifically, restrictions imposed by standard terms in virtual property ownership are manifestly inequitable. When users first log into platforms, service providers typically display "User Guidelines" that improperly attribute virtual property ownership to the service provider, thereby excluding users' rights to such ownership. For instance, Tencent's "QQ Account Registration Agreement" explicitly states that network account ownership belongs to Tencent Company.[17]If users disagree with these terms, the system automatically closes the registration window, preventing them from accessing the platform. This demonstrates the coercive nature of standard terms in virtual platforms, which infringe upon users' freedom. In China, numerous standard terms mandate virtual property ownership to service providers, yet these provisions appear fundamentally unreasonable.

The unilateral refusal by internet service providers to allow virtual property inheritance by users' heirs also warrants scrutiny. A notable example occurred in the 2012 Taobao store inheritance case, [18] where the platform denied heirs of online users the right to inherit their virtual assets, citing the User Agreement's explicit clause prohibiting such inheritance. This standard contractual clause infringes upon familial inheritance rights and constitutes substantive unfairness, necessitating regulatory restrictions. Furthermore, China's legal framework provides robust protection for personal privacy rights, requiring differentiated safeguards for virtual property involving user privacy compared to ordinary virtual assets. Therefore, while standard contractual clauses may have varying legal effects in virtual property inheritance cases, they still require appropriate regulatory limitations.

2.2.3. Value Assessment Rules are Blank

China has not yet formulated the provisions on the value assessment of virtual property, which includes the subject, standard and process of the assessment.

While China's Civil Code recognizes virtual property as a legal asset, the absence of official valuation institutions has allowed most transactions to be self-regulated by online service providers, undermining market fairness. Specifically, when users need to assess virtual property values, sellers often set prices arbitrarily based on self-interest. For example, gamers frequently sell in-game assets through third-party platforms or direct peer-to-peer transactions.[19] In such cases, prices are determined by users or intermediaries lacking professional valuation expertise. This resembles the historical pawn system in China, though the latter was legally and market-regulated. China's virtual property market remains underdeveloped, lacking self-regulation mechanisms for price determination. Moreover, while courts occasionally require service providers to conduct valuations, these assessments often reflect self-interest rather than objective evaluation. Therefore, establishing clear valuation authorities for virtual property is imperative.

Secondly, in today's internet society, there is no unified method for evaluating the value of virtual assets. Simply designating an evaluation authority cannot fully ensure transaction security for online users' virtual property. Different Chinese platforms exhibit diverse forms of virtual assets, such as in-game equipment on gaming platforms, or various accounts and their VIPs, points, or diamonds on social media. Without standardized evaluation criteria, assessors may act with self-interest, making it difficult to guarantee fair pricing. Therefore, value assessment methods should be both documented and objective.

Finally, when reviewing virtual property cases, China's judicial authorities lack established procedures for evaluating virtual asset values. Integrating assessment entities with standardized criteria requires a well-defined evaluation process. A comprehensive social work system cannot function effectively without standardized procedures, and efficient virtual property valuation demands a complete evaluation framework. [20] In conclusion, establishing a comprehensive evaluation process can help reduce judicial costs and expedite case resolution.

3. The Experience of the United States in the Protection of Virtual Property and its Implications for China

3.1. The Complete Property Protection System in the United States

As early as 1969, the United States pioneered the ARPANET computer network, which had already established itself as a leader in internet information technology. [21] Consequently, it has accumulated valuable experience in the legal protection of virtual property on the internet. First, the United States addresses virtual property ownership through judicial precedents, state legislation, and contractual agreements. In judicial practice, judges may protect virtual assets like email accounts as "movable property rights" and determine ownership through the

principles of property transfer. Specifically, ownership transfers when one party delivers virtual assets to another. Given the transferability and disposability of movable property, the recipient acquires ownership upon delivery. Additionally, parties may freely agree ownership arrangements—for instance, U.S. gaming operators typically claim ownership in End-User License Agreements (EULAs), granting users only usage rights.

Secondly, the United States' approach to excluding standard form clauses provides valuable insights for countries seeking to protect online users. The application of standard clauses in virtual property rights manifests in two aspects: ownership acquisition and inheritance. The U.S. typically safeguards these rights through statutory legislation and judicial precedents. Regarding ownership acquisition, game operators in America typically stipulate in contracts that ownership remains with the platform. While most judges uphold these clauses under the principle of contractual freedom, a minority may deem them manifestly unfair and exclude them. On inheritance matters, U.S. states have enacted specific regulations. For instance, Delaware's 2014 legislation explicitly states that heirs inherit virtual property rights equivalent to those of the original owner,[22]thereby explicitly excluding restrictive standard clauses on virtual property inheritance.

Finally, the United States boasts a comprehensive value assessment system. First, the evaluation process primarily involves professional appraisal agencies, game operators, judicial authorities, and expert witnesses. Different platforms and scenarios require different evaluators—for instance, virtual game assets are priced by operators. To address pricing inaccuracies, the U.S. has established mature market-based official pricing supervision mechanisms. Second, the country employs three valuation methods: the market approach, cost approach, and income approach. The income approach, being the most objective method, assesses value through discounted future economic returns of ownership. Third, the evaluation process in the U.S. is well-defined. From clarifying assessment objectives and targets, collecting relevant materials, selecting evaluation methods, estimating value, reviewing, to compiling reports, the U.S. has developed a complete evaluation framework that significantly aids in resolving virtual property litigation.

3.2. Implications for the Protection of Real Right of Virtual Property in China

China currently lacks a mature virtual property trading market, and there remains significant room for improvement in the protection mechanisms for this new asset category. The U.S. regulations regarding ownership attribution, standard contract clauses, and valuation standards offer valuable lessons. Firstly, unlike the U.S. where ownership attribution is clearly defined, China lacks explicit provisions for determining rights ownership, making identification challenging. However, both countries recognize the potential to establish ownership through legal attributes of "things" in judicial practice. Secondly, China has yet to establish standardized rules for handling standard contract clauses in virtual property transactions, resulting in slow development progress. Adopting the U.S. approach of excluding clauses with manifest unfairness could be beneficial. Lastly, China's virtual property valuation system remains underdeveloped, with flaws in evaluation entities, methods, and procedures. While judicial practices contain limited approaches, they lack systematic integration. Establishing a unified valuation framework modeled after U.S. regulations could drive progress in virtual property trading markets.

4. Solutions to the Problem of Virtual Property Protection in China

4.1. Make it Clear that the Network User is the Subject of Ownership

To resolve disputes over virtual property ownership, China could adopt the U.S. EULA (End User License Agreement) model for ownership division clauses. By enacting specific provisions,

the country could legally recognize users' ownership of virtual assets obtained through legitimate means, establishing user-centric ownership status through legislation to prevent rights infringement caused by ambiguous contractual terms. Virtual property litigation typically involves three parties: internet users, service providers, and third-party infringers. Current legal interpretations center on two main perspectives regarding ownership attribution: 1) Virtual assets belong to internet entities; 2) Ownership resides with service providers; 3) Users and providers share ownership rights based on transaction phases. The third perspective, which addresses third-party acquisition through good faith transactions, requires separate discussion. Three prevailing theories exist regarding virtual property rights attribution:

This article argues that the subject of virtual property ownership is the internet user, who holds the right to control such assets. The rationale is as follows: First, the effort and time invested by users transform the original virtual property, thereby granting them ownership. American scholar Leo Strauss posited that "anyone who alters the initial state of a thing through labor inherently incorporates their own work, thereby acquiring the right to exclude others from it." [23] Second, users have the right to modify virtual property forms according to personal preferences, which indirectly implies their disposal rights. In practice, users can change account passwords without interference from service providers. Third, users autonomously dispose of virtual property, with service providers merely acting as intermediaries. Proponents of phased ownership attribution argue that service providers should own virtual property during its initial development phase due to substantial financial and technical investments, but users only acquire ownership after subsequent contributions. However, the author contends that service providers only contribute to platform construction and should own the platform itself, not the virtual assets within it. Therefore, when users require service provider assistance in disposing of virtual property, the provider merely acts as an intermediary. In conclusion, legal recognition of user ownership through legislation is essential.

4.2. Exclusion Rules for Supplementary Standard Terms

Articles 496-498 of China's Civil Code have established clear regulations on the formulation, interpretation, and legal validity of standard terms. These provisions stipulate that parties providing standard terms must adhere to the principle of fairness, and any clauses unreasonably exempting their own liability or imposing excessive burdens on the other party shall be deemed invalid. In practice, online platforms frequently exploit standard terms to exclude users' ownership and inheritance rights over virtual assets. To address this, national market supervision authorities should lead the development of relevant regulations, explicitly incorporating clauses regarding virtual property rights and inheritance into key review scopes. Clauses that blatantly violate the principle of fairness should be ordered to be revised or declared invalid to effectively protect user rights. Furthermore, standard terms in virtual assets typically apply to ownership acquisition and inheritance matters, which require separate analysis.

To address the acquisition of virtual property ownership, it is imperative to establish supplementary rules for excluding standard form clauses. Beyond Tencent's precedent of obtaining virtual property ownership through standard clauses, numerous similar corporate agreements exist. These clauses severely infringe upon users' contractual autonomy by depriving them of formal freedom in contract formulation. However, China's legal practice has paradoxically validated such clauses while developing a trend toward recognizing their validity—a development that defies common sense. A notable example is the *Sheng Yanhua v. Beijing Kongzhong Xinxin Information Technology Co., Ltd. and Yang Tao* case, where the court upheld the courier company's exclusive ownership of the account.[24] Therefore, there is an urgent need to formulate supplementary rules for excluding standard form clauses in determining ownership attribution.

When it comes to inheriting virtual assets, standard form clauses should be excluded. Beyond protecting the deceased's privacy, inheritance of virtual assets involving personal privacy rights must not be permitted. Other virtual assets should be inheritable, and standard form clauses cannot be used to deny inheritance. Virtual asset inheritance primarily applies to online stores and similar digital properties. When a deceased individual passes away, their digital assets, including online stores, should be divided and inherited. Refusing inheritance through standard form clauses would clearly infringe upon the deceased's ownership rights and negate the rightful ownership of internet users. Therefore, standard form clauses cannot be applied to the inheritance of virtual assets.

4.3. Improve the Provisions on Value Assessment

The Ministry of Industry and Information Technology (MIIT) will lead the development of value assessment rules, collaborating with relevant industry associations and experts. This initiative will define assessment entities, methodologies, and operational procedures, establishing a multi-dimensional evaluation framework centered on market approach, cost approach, and income approach.

First, establishing designated evaluation entities. China should define the valuation entities for virtual assets through laws, regulations, departmental rules, or industry standards, ensuring clear supervisory scopes for transaction oversight. Furthermore, since legal provisions designate evaluation entities, these entities must fulfill corresponding obligations and adhere to established evaluation rules. This framework standardizes virtual asset valuation practices, thereby creating a comprehensive protection mechanism. For instance, in online gaming virtual asset valuation, game developers can be designated as evaluators. This approach is justified by the fact that network service providers, as developers themselves, possess expertise in virtual asset valuation and maintain objective assessments.

Second, establishing valuation methodologies. Current approaches for assessing virtual assets include the market approach, cost approach, and income approach. The market approach requires mature trading platforms with recent transaction data for reference, which helps minimize losses for non-expert owners and facilitates market circulation. However, this method is clearly unsuitable for China's context, as the country lacks established trading platforms to ensure fair pricing. Additionally, China has introduced expert evaluations to adapt to its virtual asset valuation market, as seen in the Hangzhou NFT digital collectibles dispute. [25] The cost approach proves more practical in China, determining asset value through calculated development costs and user engagement expenses. For instance, virtual assets in online games should account for developers' design, programming, maintenance, and players' time and financial investments. Finally, the income approach demonstrates broader applicability. By calculating expected returns and rental income, it accurately assesses intangible assets like accounts. Accounts with substantial follower bases generate significant potential revenue through advertising, enabling continuous value appreciation. Therefore, the cost approach better aligns with China's thriving live streaming ecosystem and allows for legally standardized valuation practices.

Third, establish a standardized evaluation process for virtual assets. In legal practice, property valuation requires following established procedures-such as marital property division or asset determination in corporate bankruptcy cases-which all involve assessing specific asset components. Therefore, the author proposes that virtual asset valuation should adopt corporate valuation methodologies. The entire process, from identifying the subject of evaluation to selecting assessment methods and final calculation, mirrors the workflow used in corporate asset valuation. [26]

5. Conclusion

With the widespread adoption of internet technology, virtual assets have become an integral part of social life, and users' demand for rights protection has grown increasingly prominent. In China's current legal practice, the determination of virtual assets' legal status, rules governing property rights transfers, and valuation mechanisms remain underdeveloped and require urgent resolution. Although legislation has recognized virtual assets as property, consensus on their legal status as real property has yet to be reached. This paper analyzes the ownership, transfer, and valuation mechanisms of virtual assets through the lens of the "property rights theory," aiming to provide theoretical references for improving real property protection. Clarifying the legal status of virtual assets will better align with digital economic development and ensure comprehensive legal safeguards.

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