

Regulations of Network Virtual Property in Criminal Law

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Abstract. Although network virtual property exists only in cyberspace, it has the same exchange value in the real world. Therefore, it is justifiable and necessary to protect network virtual property. Network virtual property is not a legal concept in the strict sense, which leads to the lack of applicable legal norms to protect network virtual property and transactions despite the gradual expansion of the scale of network virtual property transactions in the real world. Based on this, this paper studies how to better protect network virtual property from the perspective of criminal law and regulation, how to correctly understand the essence of network virtual property protection in order to achieve the purpose of protection, and puts forward specific suggestions on how to improve the existing legal system.

Keywords: Network virtual property; application of criminal law; online games; bitcoin; property rights.

1. Overview of Network Virtual Property

1.1 The Concept and Characteristics of Network Virtual Property

Some scholars clearly state that virtual property only refers to the electronic data modules such as virtual equipment in online games, completely limiting it to online games. Some scholars take the position of the so-called broad sense, and include everything that exists in cyberspace, including the network itself, into the scope of the so-called virtual property. Others use the concept in an even broader sense, extending the scope of virtual property to mobile communications outside the Internet, for example, they argue that virtual property includes "Internet traffic packages" of communication companies. [1] However, despite the fact that scholars have their own views, we can still analyze and conclude from its literal meaning that network virtual property is the property whose subject of right exists in the network world but not in the real world. From an objective point of view, since the network virtual property exists through the network, it is actually a kind of information, i.e., electromagnetic information that exists by the Internet technology, which can be dominated by the subject of the right and can be used to exchange information. Network virtual property has two main characteristics. First, network, which means network virtual property is dependent on the Internet technology and exists, without this carrier, network virtual property cannot be talked about. Second, non-permanence, which means that network virtual property is generally a service provided by the network operator to the right subject. For example, if the network virtual property exists in the online game, then once the game operator terminates the game operation, and the network virtual property in it also disappears. Another instance is that the online game csol2, which was officially discontinued in mid-2018, contains the game data of network virtual property and is of course zeroed out.

1.2 Legal Attributes of Network Virtual Property and Its Values

Regarding the legal attributes of virtual property, although it has some of the characteristics of claims and intellectual property rights, this paper prefers the property attributes of network virtual property. The reasons are as follows. The right subject has the right to dispose of its network virtual property, that is, the right subject can trade, exchange and use the network virtual property. Network virtual property can be said to be a special kind of intangible property, which is part of the private movable property of the right subject, and this is also reflected in the legislative system in Taiwan, China, which considers virtual property as part of the player's private movable property and can be exchanged or traded. Marx pointed out that the value of commodities exists in the undifferentiated

human labor condensed in them. [2]In reality, network virtual property such as online game props, players will also consume a lot of time intelligence and even money. Moreover, in real life, the transaction of network virtual property often occurs, so we should affirm its value existence.

1.3 Specific Classification of Existing Network Virtual Property

At present, network virtual property can be broadly classified into three categories.

The first category is what people are familiar with -- game coins. In the era of single-player games, the protagonist accumulated currency by defeating enemies and winning wealth in gambling halls, and used it to buy equipment, but only in his own game machine. At that time, there was no "market" among players. Since the establishment of portals and communities on the Internet and the networking of games, virtual currencies have become a "financial market" and players can trade game coins among themselves. The second type is the special currency issued by portals or instant messenger service providers to purchase services within the site. The most widely used is Tencent's QQ coins, which can be used to purchase membership, QQ shows and other value-added services. The third type of virtual currency on the Internet, such as Bitcoin (BTC), LiteCurrency (LTC), etc. Bitcoin is a kind of electronic currency generated by open source P2P software, and some people translate Bitcoin as "bit gold", which is a kind of network virtual currency. It is mainly used for financial investment on the Internet, but can also be used as a new type of currency directly in life.

2. The Status Quo of Legal Protection of Virtual Property

2.1 The Status Quo of the Protection of Network Virtual Property in Other Countries or Regions

To sum up, along with the emergence of a large number of network virtual properties, the number of related network virtual property disputes is also increasing. There are different attitudes in the judicial practice of various countries or regions in hearing such cases. Now this paper will list and analyze the relevant criminal legislation and jurisprudence of certain countries or regions.

2.1.1 Regulations of Network Virtual Property in Japanese Criminal Law

In the legislative theory, Japan has creatively used the concept of "electromagnetic records" to conceptually confirm the virtual property of the network. Subsequently, Article 161 of the *Penal Code of Japan* established the crime of unlawful production and use of electromagnetic records, thus establishing the criminal protection of virtual property on the Internet. However, in the face of increasing hacking attacks, Japan has introduced the *Act on the Protection of Personal Information* to deal with it. At the same time, Japan has also achieved great success in the protection of network virtual property, a typical representative of network virtual property - network virtual currency. On May 1st, 2020, a revised version of the *New Fund Settlement Law* containing provisions related to virtual currency came into effect, including the renaming of virtual currency to crypto property, thus further establishing the status of virtual currencies, confirming their property attributes, and providing for addressing the risk of theft of virtual currencies.

2.1.2 Regulations of Network Virtual Property in Korean Criminal Law

The Korean network virtual industry is extremely developed, and a relatively complete online game industry chain has been formed, and the Korean government pays high attention to virtual property. However, before 2007, both the legislative system and the theoretical circles in Korea did not recognize the value property of network virtual property, which had a huge conflict with the interests of the majority of players. On the other hand, because the transaction of virtual property is characterized as illegal, many users can hardly get judicial protection when their interests are infringed, and various disputes keep occurring and fall into the situation that cannot be solved. Therefore, after re-examining virtual property transactions, Korea finally recognized the legality of virtual property in law and provided legal protection for virtual transactions. The value of network

"virtual property" is explicitly recognized in both legislation and justice, stipulating that virtual characters and virtual goods in online games have property value independently of service providers. The service provider only provides a storage place for these private properties of game players without the right to modify and delete them arbitrarily, and the nature of the network property is not essentially different from the money in the bank account. [3] This means that it is perfectly possible to include virtual property into the adjustment of property in the traditional sense. Finally, the legality of virtual goods was legally recognized and virtual transactions were protected by law, and in 2007, the *Game Industry Revitalization Act* was enacted, which provided for the establishment of "Game Day" and the protection of virtual property of games.

2.1.3 Regulations of Network Virtual Property in U.S. Criminal Law

In terms of legislation, the U.S. enacted the first act on computer network crime as early as 1986, namely the U.S. Federal *Computer Fraud and Abuse Act (CFAA)*, which defines the nature of illegal intrusion into computer systems and illegal destruction, tampering and copying of computer data and information. On November 24th, 1998, the California Superior Court issued an injunction prohibiting three former Intel employees from sending Intel-bashing emails. The defendants were former Intel employees who, after being fired, sent mass emails to tens of thousands of Intel employees on several occasions from December 1996 to September 1998. They protested against Intel's unfair treatment and exploitation of their employees. The judge heard that the Intel employees' e-mail addresses were not publicly available and that Intel's e-mail system was not a public forum, so the defendants did not have a constitutional right of access. Although the content of the emails was a labor dispute, the manner in which they were sent constituted the tort of trespassing on another's chattel property, and an injunction was granted. In this case, the U.S. court protected the e-mail account as a chattel in rem. [4] With the introduction of the U.S. Federal *Computer Security Act* and the U.S. Federal *No Electronic Theft Act*, the U.S. protection of virtual property on the Internet has been gradually improved. For example, in the case of *Mark Bragg v. Linden Lab*, the plaintiff Mark claimed ownership of the virtual property involved in the case, and the defendant Linden Lab, as the operator of the virtual world, illegally confiscated its virtual property in violation of the law, and finally the judge affirmed the plaintiff's claim in the form of a ruling, which actually affirmed the plaintiff's ownership of the network virtual property.

2.1.4 Regulations of Network Virtual Property in Taiwan's Criminal Law

Taiwan, China, which also has a fast-growing network virtual property industry, has included the protection of network virtual property in its criminal law. In October 1997, Taiwan's Legislative Yuan passed an amendment to its criminal law, classifying "electromagnetic records" as "movable property" and including theft of online game accounts in the criminal law. In 2001, the amendment to the Criminal Law expanded the protection of electromagnetic records to Article 205, "Forgery of Documents and Printed Documents," and in 2003, the amendment of Taiwan's Criminal Law added a new chapter 36 "Computer Crime Chapter", in which articles 358 and 359 specifically regulate the theft of other people's accounts and the destruction of electromagnetic records, [5] which regulates the crimes derived from online games in a clearer legal form. The legislative reason for this change can be learned from the legislative note of the Legislative Yuan of Taiwan. This note points out that in the 1997 amendment, in order to regulate some computer crimes, the provision that electromagnetic records are treated as movable property was added, making them the object of the crime of theft. In addition, Taiwan has also put forward higher requirements for online game operators, and in October 2002, the Taiwan Consumer Protection Association issued the "Model Contract for Dial-up Services", which explicitly stipulates the amount of compensation in case of network failure, the rights and responsibilities of the legal agent, and the confidentiality of customer information, and for the first time regulates both operators and users. Both parties are prohibited from sending spam [6].

2.2 The Status Quo of the Protection of Network Virtual Property in China's Mainland

2.2.1 The Current Regulations of Network Virtual Property in Criminal Law

China's current financial attributes for network virtual property is not made legal exact provisions, especially the relevant public security organs for the victim of virtual property theft, fraud and other cases, often end up in accordance with the *Public Security Management Punishment Law*, that minor violations do not constitute a crime, let alone talk about the protection of criminal law, which led to the frequent occurrence of network virtual property crime. The existing judicial practice tends to follow the following three paths to regulate the network virtual property crime.

(1) Crimes Against Freedom of Communication

According to Article 252 of the *Criminal Law* of China, the crime of infringement of freedom of communication refers to the concealment, destruction or unlawful opening of another person's correspondence, which violates the right of citizens to freedom of communication, and this kind of circumstance is very serious. The object of this crime is the correspondence of citizens. However, in the case of QQ, which is an instant interaction software, the QQ number is the "passport" for this communication software, and to a certain extent, as long as one has a QQ number, one can use QQ to communicate. In reality, there are many cases of unauthorised tampering with other people's QQ numbers, which clearly impedes citizens' freedom of communication and constitutes a crime against freedom of communication.

(2) Illegal Acquisition of Computer Information System Data Crime

According to Article 285 of the *Criminal Law* of China, the crime of unlawful acquisition of computer information system data and unlawful control of computer information system refers to the violation of state regulations, intrusion into the computer information system outside the field of state affairs, national defense construction, cutting-edge science and technology or the use of other technical means to obtain the data stored, processed or transmitted in this computer information system, and the circumstances are serious. In the above case analysis, Ye Mao illegally intruded into the computer network of Company A, illegally obtained and tampered with the data therein, and actively carried out the illegal and criminal acts knowing that he would carry out illegal and criminal activities, and could be convicted and sentenced for the crime of illegally obtaining computer information system data.

(3) Theft

Article 264 of the *Criminal Law* of China stipulates that the crime of theft refers to the theft of public and private property. If the amount is relatively large, or repeats theft, home theft, theft with a weapon, or pickpocketing, he shall be sentenced to fixed-term imprisonment of not more than three years, criminal detention or public surveillance; if the amount is huge or there are other serious circumstances, he shall be sentenced to fixed-term imprisonment of not less than three years but not more than 10 years and shall also be fined; if the amount is particularly huge or there are other particularly serious circumstances, he shall be sentenced to fixed-term imprisonment of not less than ten years or life imprisonment, and fines or confiscation of property. In recent years, most courts have identified the theft of game weapons and equipment, or theft of accounts as the crime of theft, that is, the network virtual property belongs to the category of property of the criminal law, the suspect violated the victim's ownership of virtual property with the network, constituting the basic elements of the crime of theft, can be such illegal access to other people's virtual property behavior characterized as theft.

2.3 Case Study

The current domestic legal system does not have clear provisions on the protection of network virtual property coupled with the multiplicity of network virtual property properties, the discretion of the judge is large, the knowledge level of different judges in different regions, different concepts, resulting in different attitudes towards network virtual property cases, so the judicial practice is more divergent. For example, in case A, the defendant Wu and others used software to illegally invade an e-commerce platform and steal the electronic data of "Xinhua One City Card" customer account

number, password code and account amount on the business platform, and then cash out the stolen relevant data or use it to purchase laptops online, involving an amount of more than 800,000 yuan. In case B, the defendant obtained the victim's online game account password by illegal means, and then logged into the account to transfer the game equipment in the account to his own account and sold part of the game equipment, making an illegal profit of RMB 48,200. The above two cases were trialed by the same court in the same year[7]. In case A, the court held that the defendant Wu and others "stole the electronic data of Xinhua One City Card for the purpose of selling the stolen account information to others directly for profit, but to convert the virtual property recorded in the stolen electronic data into cash or physical property", so the defendant's behavior belongs to the secret theft of other people's finances, which constitutes the crime of theft[8]. However, the court in case B found that the defendant had illegally obtained the data stored in the computer information system in violation of the state regulations, and the circumstances were serious, and his behavior had constituted the crime of illegally obtaining computer information system data. [9]For the same illegal access to other people's game accounts to transfer virtual props, the court made a different characterization, the difference lies in the application of different choices on whether virtual property is property or data.

3. The Protection Dilemma of Network Virtual Property

Due to the network nature and non-permanence of network virtual property, it makes network virtual property have no fixed storage location, and its right subjects may also be citizens of various countries or regions connected to the Internet, and its jurisdiction and the trial period of the applicable law have become the problems to be solved. Coupled with the fact that the special intangible property of network virtual property has the characteristics of property rights, as well as some claims and intellectual property rights, the application of the existing legal rules faces a dilemma in the face of the legal application of network virtual property disputes.

3.1 Cross-border Application of Network Virtual Property

The network virtual space is a borderless and unseen space, which is completely different from the real world. With the further development of network technology, the network makes the concept of geographic territory vaguer and vaguer, how to determine the jurisdictional court for the case of infringement of virtual property rights occurring in the network space becomes a new problem. Network virtual property may flow to various countries, if the network virtual property is infringed, or non-national people to the subject matter of the request, then it may cause a long time to a country's network virtual property to apply the laws of other countries, there will be a lot of difficulties in the application of the law technically, will make the property rights relationship more complex. For example, if the plaintiff logs into his account through a place where there is a network terminal, the defendant's server will feed the modified account information to the network terminal used by the plaintiff in the form of data. [10]If so, the plaintiff can log into his account through any network terminal, prove that his network virtual property is infringed, and use it to choose the court to accept the case. Then the law provides for the territorial jurisdiction rules in cases involving virtual property infringement is equivalent to providing that any court has jurisdiction. It can be seen that the traditional territorial jurisdiction rule faces the dilemma that the jurisdictional court cannot be determined in cases involving virtual property [11].

3.2 The Problem of Determining the Value of Network Virtual Property

The value of network virtual property is often difficult to determine, taking online game equipment as an example. In real life, online game equipment production often has network operators for pricing, although the service provider is the creator and maintainer of the virtual space services it provides, any of its operational activities are profit-oriented, in determining the price of network virtual property is bound to consider from the perspective of their own benefit, making the value of a virtual property depends entirely on the operation and profitability of a particular virtual space, as well as

the marketing development strategy of the service provider. Therefore, the price of virtual property is the subjective price of the service provider, and it is fickle and not objective. In transactions between players, these properties often reach prices on their own according to players' preferences and certain collocation, independent of network operators' pricing, but in fact, because transactions between virtual properties are highly subjective, the demand for the same virtual properties varies greatly between different users, and in addition, users' determination of the transaction price of virtual properties is highly arbitrary, which leads to the situation where the transaction price of virtual property is highly variable and quite disorderly. Therefore, the current legal rules do not provide a specific answer as to who should prevail.

3.3 The Subject Recognition of Network Virtual Property

Network virtual property, after all, is attached to the virtual network and exists,[12] the subject of its possession is sometimes not the subject of the real world, but the subject through the registration account, and then through the account to take possession. In actual life, many users in the registration account fill in the personal data is not perfectly true, so then when disputes occur, how to determine the true identity of this type of people, also becomes a problem. Take the issue of self-identification of the subject of virtual property rights as an example. Users often do not leave their real identity information when registering with service providers, and their registered account name and password are the only evidence to prove their user identity. Once the registration number is stolen, the password is bound to be modified by the theft (some service providers even provide services to modify the user's account name), so that users want to prove that a certain virtual property is owned by themselves, obviously very difficult, because the account name, password and other information and the user's identity proof do not have any substantial link.

4. Suggestions for Improving the Protection of China's Network Virtual Property

4.1 Determine the Legal Nature of Network Virtual Property by Way of Legislation

Network virtual property is an emerging product, and the law with a certain lag, so the legal nature of network virtual property with a certain degree of ambiguity, according to the provisions of Article 92 of China's criminal law on the scope of private property of citizens,[13] this paper believes that, maybe in the future amendments to the criminal law or judicial interpretation, the fourth paragraph of the "other property "to explain, that is, from the legislative affirmation of network virtual property is the property protected by criminal law, so that the protection of network virtual property can be based on the law, clear network virtual property value attributes.

4.2 Clarify the Crime Pattern of Network Virtual Property Crime

After it is clear that the crime of unlawful acquisition of virtual property belongs to the category of crimes against property, it is inevitable to discuss the identification of the crime form. The crime of acquisition of property emphasizes the state of domination and control over property, therefore, in the establishment of the crime of acquisition of property, regardless of whether it is by real means or technical means, under the assumption that the amount reaches the criminalization standard, as long as the wrongful act of the perpetrator causes the victim to lose the exclusive possession of his virtual property, then the crime is established. This "loss of exclusive possession" is generally manifested as a spatial transfer of the victim's virtual property from the victim's controllable scope (i.e., personal account or computer) to the perpetrator's control, which constitutes a network virtual property crime.

4.3 Construct the Value Assessment Mechanism of Network Virtual Property

Although virtual property has the general properties of real property, it does not mean that it can follow the law of value perfectly. Both formal and informal market transaction laws and evaluation

standards have operational significance. Currently, there are the following three channels to obtain market transaction prices. First, the official channel to obtain price information or data from network operators, especially when the network operators themselves suffer losses, this way is more commonly used. Second, the quasi-official channel, that is, from the third-party network virtual property trading platform can learn about the user community in the offline transaction process spontaneously formed, generally recognized and accepted by everyone. The price set by the "industry practice" has relative stability and certainty. Third, the professional opinion of professional game merchants and senior players. For the definition of such prices, the network operators and the third-party price evaluation agencies should cooperate with each other under the leadership of the third-party regulatory department, using data collection and scientific analysis and other methods to determine and publish the record. On this basis, factors such as the number of illegal acquisition acts, means and the actual amount of virtual property acquired and the final amount of stolen goods shall be taken into consideration.

4.4 Sound Forensic System for Network Virtual Property Crimes

In the process of trial of network virtual property crimes, evidence is a major problem, this paper believes that the following aspects to break this problem.

(1) Improve the Real-Name Registration System

The first major reason that makes it difficult to obtain evidence is that users use false identity information to register, thus making it difficult to determine the subject of the lawsuit and pursue infringement liability. To address this situation, we can start from the network operators, requiring them to require users to register with real identity information when providing services. However, it is worth noting that the private information of users should be strictly protected from leakage.

(2) Implement the Network Operator's Responsibility for Forensics

Network operators often have a great technical advantage compared with users, users often do not have the technical conditions for evidence and thus at a litigation disadvantage. In response to this situation, the author believes that the network operator's burden of proof can be clarified by law, that is, under the premise of ensuring that the network operator's commercial secrets are not affected, it is required to publish the electronic evidence stored on the mobile terminal device, and prohibit the network operator from tampering with its electronic data, the main purpose is to maintain the authenticity of electronic evidence. In the process involving electronic evidence forensics, virtual property victims should have their corresponding network accounts frozen at the first time of reporting, so as to avoid suffering further property losses. On the other hand, when investigating such cases, judicial authorities need to maintain the integrity of electronic data as much as possible. From the perspective of network operators, the company should actively cooperate with the judicial authorities' personnel in handling the case, thus assisting the judicial authorities in jointly combating cybercrime.

4.5 Establish the Sentencing Basis of Setting the Amount Offense of Sentencing as the Main, the Circumstances of Sentencing as a Supplement

The amount determination is an important basis for measuring the establishment of property crimes and the severity of sentencing. As mentioned above, although virtual property has the general properties of real property, it does not mean that it can completely follow the law of value. Involving the value assessment of network virtual property, the author believes that the official pricing of game operators cannot have too much influence and can only be considered as a factor. In addition, two aspects should be considered, namely the effort and money invested by users in the network virtual property, and the popularity of the virtual property by people. Adopting such an assessment can make the loss of virtual property when it receives infringement well-documented, so as to determine the specific amount of the crime as the most important basis to form a stepped sentencing basis.

In addition, due to the characteristics of network virtual property, the crime of network virtual property presents the phenomenon of low cost of crime and a large number of crimes. Therefore, for

the multiplicity of network virtual property crimes, the amount aspect alone is not enough to realize the principle of adaptation of crime and punishment. In the case that the cost of crimes against network virtual property is lower than the cost of crimes against general real property, the number and difficulty of the acts committed, the duration and the bad degree of impact on individuals and society are the objects to be examined more emphatically.

4.6 The Treatment of Competing Network Virtual Property Crimes and Traditional Crimes

Virtual property, while embodying real property interests, is also manifested in the form of network items in computer systems. In the crimes involving virtual property, the competition between property crimes and computer crimes may occur. For the virtual property harmful acts committed by means of network technology, the competing forms should be specifically analyzed to choose the appropriate criminal law and regulatory approach. On the issue of virtual property, computer data carries and represents property interests, and the data itself is also a kind of property. If a general and special choice is made between data and property, computer data should be regarded as property, and the act of obtaining virtual property by destroying or acquiring computer data should be regarded as a property crime rather than a computer crime.

4.7 Improve the Regulatory System for Network Operators

In judicial practice, there are many affected network operators often delete users' network virtual properties arbitrarily with their overwhelming advantages over users, on the other hand, users generally take a tolerant attitude towards some small amount of network virtual properties due to their relatively weak legal awareness. Therefore, certain legal norms are needed to regulate such behavior. For example, in special administrative regulations, related departments can design one or several departments to supervise the behavior of network virtual operators, receive reports from the public, and crack down on their arbitrary recycling of network virtual properties.

4.8 The Identification of the Network Operator Unit Crime

At present, there are two main manifestations of unit crimes involving network virtual property, one is that operators use illegal means to create virus programs to attack each other's networks in order to obtain a broader market and vicious competition, and the other is that the aforementioned operators' inaction brings about the violation of virtual property. The current rights and obligations of network operators are not clear, and users are basically in a passive acceptance position when signing service terms with operators, who are almost in a state of exemption. For cases of virtual property infringement, operators evade their own responsibilities and watch the battle between perpetrators and users from the other side of the river. Whether technically or economically, network operators should be held criminally liable after users report or network service providers are able to detect certain user behavior violations without stopping them and failing to take initiatives to prevent further harm, causing greater damage to users and even the network order.

5. Summary of the Regulations of Network Virtual Property in Criminal Law of China

Network virtual property is an intangible property based on the times, but after the development of network operators, more and more people are aware of and understand the value of its existence, and the risk arises along with the value, but the relevant legislation in China is slightly inadequate, the jurisdiction is not clear, the allocation of responsibility is not determined, and the unclear concept and attributes have caused great confusion for the judiciary to deal with the case. Therefore, the judiciary should consider the special nature of property in all aspects when hearing the case of network virtual property, determine the legal attributes of network virtual property positioning and improve its protection, which requires all legal persons to study the relevant theories, apply effective measures such as legislation and justice, establish multi-party settlement mechanism, and then

supervise and other relevant supporting facilities. We firmly believe that with the progress and development of society, the definition and protection of network virtual property in the domestic penal system and even the whole legal system will be clearer, and network virtual property will be effectively protected.

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