

Research on Legal Guarantee of Personal Information Protection in the Metaverse

Weijing Wang, Dexue Li

Guizhou University of Finance and Economic, Guiyang 550000, China.

Abstract: The concept of metaverse originated from science fiction, laid its foundation on digital currency, and supported by a series of integrated cloud computing and Internet of Things technology. It is a virtual world that reproduces human panoramic activities with the new digital economy based on blockchain technology as the essential part. The construction of the personal information protection system in the Metaverse should be based on the laws and regulations, including *Civil Code*, *Personal Information Protection Law*, and *Electronic Commerce Law*. Also, the consent system needs to be improved, and a diversified mechanism should be built. Information fiduciary duties is suggested to be introduced and the legislation interpretation should be strengthened. Professional monitoring agencies should be established to implement individualized disclosure. The aim is to achieve a balance between personal interests and public interests, and embrace the economic changes brought by the Metaverse.

Keywords: Metaverse; Digital Economy; Blockchain Technology; Personal Information Protection; The Consent System

1. Introduction

The Metaverse world described in the science fiction *Snow Crash* has triggered the heated topic in the Internet industry this year. As the third-generation Internet, Metaverse represents the future development trend of global big data and artificial intelligence, and is also a new field for the global innovation industry to explore. In March, Roblox, the first American Metaverse concept stock, was listed on the New York Stock Exchange, with a market value reached \$40 billion in just 5 days, bursting with huge energy in the capital market. In October, social media, Facebook, announced that the company was renamed Meta (Metaverse), which showed Zuckerberg's determination to delve into the field of Metaverse. With the promotion and introduction of Metaverse application scenarios, the related technologies will continue to be applied in everyday lives of ordinary people. The world of Metaverse will be unlocked and promotes the high-quality development of digital economy.

2. Origin of the Metaverse

The Metaverse is not a new concept, and it has been gradually improved by the development and application of Metaverse technologies such as blockchain and the Internet of Things. At present, an authoritative definition of the concept of the Metaverse has not yet been formed. The extensively acknowledged definition in the theoretical circle is that put forward by Meta, the zero-carbon metaverse think tank, "The Metaverse is a possible digital world in which people live and work with digital identities." This view is also consistent with The definition proposed by Roblox.

3. New Challenges on Personal Information Protection in the Metaverse

Metaverse-related technologies have provided humans with new ways of thinking and new means to understand complex systems. However, the governance system of Metaverse is not yet standardized, and data security, including personal information, is threatened by serious security risks. In the Meta-economy, it is of great importance to figure out how to protect the legitimate rights and interests

of users and enjoy the convenience of Metaverse technology.

3.1 The Difficulty to Apply Consent System in the Metaverse

In the Metaverse, users have low awareness of the protection of data behaviors they agree to. Because of the differences in individual education level and psychological identity, users are not aware of, or not fully aware of the technical rules of various users provided by the Metaverse platform. The legal notification in form is useless, and the signed electronic agreement on personal information by users is the same, which makes the restraint rather weakened. For users are more concerned about the convenience, they will not read all privacy agreements carefully, nor will they communicate with the platform and argue about privacy agreements, which lays the hidden trouble for the existence and development of the user consent system. .

3.2 The Rigid Protection Model of Process and Result

The realization and interaction of scene in the Metaverse are based on the virtual property, an important factor to construct the meta-economy. For example, to purchase properties or make transactions with other users in the Metaverse, the consent system is required to regulate the ways to transact properties such as virtual land, and the application of law to consent system is bound to affect the security of asset investment in the Metaverse. Currently, in judicial practice, game equipment and props with property value can be regarded as virtual property. The virtual property in the Metaverse is mainly presented in the form of NFT (Non-Fungible Token). According to the relevant provisions of the *Civil Code*, the virtual property possessed by citizens is also under the protection of law. Therefore, the analysis of the definition of the ownership of Metaverse assets can take the management and control system of NFT assets for reference. The assets can be controlled by passwords, and encrypted transactions are adopted to ensure that the virtual currency will not be embezzled or misappropriated and guarantee the sellers will not lose ownership after the purchase.

3.3 Increased Security Risks Caused by Highly centralized management

Highly centralized management will also lead to increased security risks of personal information outside the Metaverse. In order to have better interactive experience, the Metaverse must be supported by devices such as the Internet of Things, and the Metaverse platform is the important carrier for providing hardware support. Personal information security outside the Metaverse is the requirement for platform data security management. Even in a highly coded, automated decision-making Metaverse, the possibility of human error or technological crime still exists, and the probability is no less compared to that in real life. While blockchain and VR forensics technologies are maturing rapidly, they are still new things to us. Many existing electronic forensics software have not caught up with the current cloud or social trends, which makes it difficult to investigate and collect evidence after the security risks occur in the Metaverse. The high degree of centralization of the platform will make it more difficult to collect evidence from external investigations.

4. Institutional Framework of Personal Information Protection in the Metaverse

The Metaverse has opened up a new space for the development of the digital economy, and it contains great opportunities for economic transformation and social development. At the same time, it also breaks the traditional economic framework and poses new challenges for the development of legal system. In this regard, China's personal information protection system also needs to be built on these new challenges and give necessary responses.

4.1 Improve the consent system and build a diversified licensing mechanism

The discussion on the consent system in the theoretical circle has not only provided diversified solutions for users' personal information protection in the Metaverse, but also provided effective means for Metaverse platform to manage sensitive personal information of its users. From the perspective of comparative law, the *California Consumer Privacy Act* systematically distinguishes consumers according to the characteristics of different subjects, and differentiates prices for different subjects, so as to realize an economic incentive plan for the platform to provide personal information. Unfortunately, China's current *Personal Information Protection Law* adopts an integrated protection system, that is, no matter the characteristics of the subject who owns the personal

information, unified protection is implemented in all. There is no denying that this kind of protection system has prominent advantages and omission or unfairness will not occur when it comes to the protection of personal information. However, the users in the Metaverse are obviously different from natural person in the traditional legal sense.

4.2 Introduce information fiduciary duty and strengthen legislative interpretation

The information fiduciary duty is the extension of the traditional fiduciary duty to the field of Metaverse. Its scope is expanding with the development of the economy and society. Therefore, in the Metaverse, the relationship between platforms that are dominated by blockchain and IOT and users is associated. Danny Shalef (Solove DJ.) pointed that there is a fiduciary relationship between data companies and individuals, which needs to be regulated by fiduciary law guidance and the formulation of sound policies^[5]. Balkin believed that many Internet service providers and cloud computing companies that collect, analyze, use, trade, and distribute personal information should be regarded as information trustees of customers and users^[6].

4.3 Establish a professional monitoring agency and implement personalized disclosure

The consumer's right to know and the operator's duty to inform have been stipulated in the *China's consumer rights and interests protection law*, the scope of the duty to inform is not a comprehensive disclosure, but the effective notification, that is, the extent of information disclosure is expanded without limit does not equal to the effective protection for consumers.^[8] For some personal information involving users that are very private, it even requires a comprehensive and systematic disclosure of the basic rules of the algorithm that govern indexing, searching, and prioritization.

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- Information of Author: Wang Weijing(1998-), male, Hegang City native, Heilongjiang Province, Master of Law, School of Law, Guizhou University of Finance and Economic, mainly engaged incivil and commercial law research.