

# Analysis of Legal Issues and Countermeasures Brought by the Metaverse

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**Abstract:** *With the rapid development of the digital economy, the metaverse has transformed from a concept into reality, which is one of the key aspects of current modernization construction in China. It is noteworthy that while its various advanced technologies have enriched people's lives with new experiences, they have also given rise to numerous legal issues. Based on the concept of governing the country according to law, this paper uses systems theory as an analytical framework to construct a model, proposing that attention should be paid to the legal issues brought by the metaverse, clarifying its definition and characteristics, and exploring the legal issues at both macro and micro levels, as well as the countermeasures of multiple stakeholders. This is of great significance for the digital development of contemporary society and plays a main role in further advancing Chinese-style modernization.*

**Keywords:** Metaverse, Legal Issues, Countermeasures, Systems theory.

## 1. Introduction

Since the concept of the Metaverse was first introduced in 2021, it has attracted continuous attention from all sectors of society, ushering in a new era for human civilization that belongs to the Metaverse. The socio-economic landscape is characterized by digital development, and the various advanced technologies of the Metaverse have brought people new life experiences represented by virtual spaces. However, this has also led to numerous legal issues. The increase in social deviance and virtual crime has pushed the issue of the rule of law in the Metaverse to the forefront of public opinion, making the resolution of legal issues arising from the Metaverse an urgent matter. Since the 20th National Congress of the Communist Party of China, the concept of Chinese-style modernization has put forward new requirements for China's development, directly providing guidance for the direction of the Metaverse's development. Based on the philosophy of governing the country according to the law and using systems theory as an analytical framework to construct a model, this paper proposes that attention should be paid to the legal issues brought by the Metaverse, clarifying its definition and characteristics, and exploring the legal issues at both macro and micro levels, as well as the countermeasures of multiple stakeholders. This is of great significance for the digital development of contemporary society and plays an important role in further advancing Chinese-style modernization and building a modernized strong country.

## 2. Research Background

### 2.1 The Age of the Metaverse

In this era of rapid technological progress, with the development and application of new generation technologies such as artificial intelligence, blockchain, and human-computer interaction, human civilization has entered a new stage of development—the Age of the Metaverse. Since the concept of the Metaverse was first introduced in 2021, it has received close attention from all sectors of society. The

advent of a new global era is not only due to the progress of Metaverse technology but also because of its impact on a global scale. It signifies that the development of the scientific and technological community has entered a new phase, prompting the academic world to focus on new academic hotspots and greatly promoting the modernization of human production and living. In recent years, the global pandemic has seen the arrival of the Metaverse era breaking through the spatial and temporal limitations of the real world. For example, people working from home use Metaverse applications for online meetings, which can bring users closer together and achieve better interactive effects. It is evident that the Metaverse, through advanced new technologies, has met the diverse needs of people under pandemic control and brought a new dawn for the global economy, which has been sluggish due to the impact of the pandemic [1].

### 2.2 The Concept of Chinese-Style Modernization

The report of the 20th National Congress of the Communist Party of China points out that on the basis of long-term exploration and practice since the founding of New China, especially since the reform and opening up, our party has successfully promoted and expanded Chinese-style modernization.

The concept of Chinese-style modernization guides the direction of the Metaverse's development. On the one hand, in the goal orientation of Chinese-style modernization, achieving economic modernization requires grasping the characteristics of the new era and the new stage of development, that is, while adhering to a systematic concept, coordinating the quality, efficiency, safety, and scale of economic development, and continuing to implement new development concepts and build a new development pattern. The development of the Metaverse should also meet the above requirements, thereby shaping new advantages, tapping into internal momentum, and adapting to new trends in economic development. On the other hand, Chinese-style modernization is a modernization where humans live in harmony with nature, and the development of a green Metaverse has also become an important direction for the development of the Metaverse.

### 3. Raising the Issue

#### 3.1 Accurate Understanding of the Metaverse

##### (1) The Concept of the Metaverse

There is no unified standard for the definition of the Metaverse concept to date. Scholars from various fields have different focuses in their definitions, but there are still commonalities. By exploring the broad and narrow senses, the Metaverse can be seen as a “digital world” or a “sea of technology.”

Broadly speaking, taking the definition proposed by scholar Fang Wei as an example, “The Metaverse is a virtual world constructed by humans using digital technology, which maps or transcends the real world and can interact with the real world, possessing a new type of social system as a digital living space.” Scholars generally acknowledge five points: First, the composition of the Metaverse is inseparable from digital technology; second, the role of the Metaverse in constructing the virtual world; third, the Metaverse acts as a multifunctional medium between the real and virtual worlds; fourth, human development guides the development of the Metaverse; fifth, the Metaverse is essentially a new type of social system that must follow the social principles of the real world.

Narrowing down the concept of the Metaverse, in a narrow sense, the Metaverse is a new comprehensive technological concept, based on interactive technology, artificial intelligence technology, immersive internet technology, Internet of Things technology, electronic game technology, Web3.0, and other advanced digital technologies, to construct, map, or transcend the real physical world into an interactive virtual world. It is a fusion of many modern technologies, which is a collection of many advanced new technologies. It is created by human wisdom and is constantly changing and expanding as people create and improve new technologies, hence the term “universe.” [2]

##### (2) Technology and Applications of the Metaverse

As a new technological concept, the Metaverse, with users as the target and center, is an internet application that integrates all software and hardware technologies and is also a symbol of the development of informatization to a new stage. It employs a rich variety of advanced technologies, including key technologies such as: Internet of Things technology, interactive technology, 5G/6G, electronic game technology, network and computing technology, artificial intelligence technology, blockchain technology, and digital twin technology, among others. The Metaverse not only integrates existing advanced technologies but also continuously updates and upgrades them, and it also gives birth to new technological branches.

The technology of the Metaverse has been applied to various fields. The most common applications are in education, gaming, entertainment settings, training work, art, virtual commerce, finance, blockchain, and more. The principle of the Metaverse’s technology application is mainly to play its role in constructing a virtual world, where superior

construction technology promotes an immersive experience for users, encouraging interaction between users and the virtual world. For example, in the field of education, situational immersive teaching greatly promotes the interaction between the teaching environment, teaching resources, and students, and can also carry out sensory-synchronized online teaching based on the form of virtual avatars.

##### (3) Characteristics of the Metaverse

Based on the concept and connotation of the Metaverse, and referring to the development path of the Metaverse since its emergence, the characteristics of the Metaverse can be summarized as follows:

First, new rules. As a new entity, the Metaverse has different operating rules from traditional models and differs from the centralized rules of the real world. The original intention of constructing the Metaverse’s virtual world was to optimize the real world and avoid certain restrictions in the real world, such as social and spatial limitations. Researchers hope that the operating rules of the virtual world can be different from the centralized rules of the real world, and even completely abandon centralized rules. However, since the virtual world is mapped and fully simulated based on the real world, its new feature in operation is to break through the traditional centralized model, but its operating mechanism is also based on centralization. Second, true experience. Metaverse technology brings users a realistic immersive experience, not only in terms of individual sensory realism and object realism. It also includes various fields and links, such as immersive experiences in the Metaverse during production processes, which can simulate the production environment, process, and object. Third, complete structure. The construction of the Metaverse is a complete replication of the real world; it fully simulates all elements of the real world and has a complex structural layer that can be orderly summarized into physical layers, data layers, algorithm layers, and so on. Fourth, great value. In the long run, the Metaverse can bring people multifaceted value, such as entertainment value and experiential value at the spiritual level, and efficiency value at the material level, promoting social productivity, and so on. Fifth, many risks. The governance structure of the Metaverse makes it potentially uncertain, with complex constraints and management, and any tendency in the governance structure can bring great risks [8].

#### 3.2 Legal Issues Brought by the Metaverse

Exploring the issues that the Metaverse brings to the law requires emphasizing the “whole” of the legal system and the relationship between its various legal parts and the Metaverse, which is best analyzed using systems theory.

##### (1) Macro Perspective: Obstacles to Rule of Law Governance

From the perspective of systems theory, the legal system is an organic unity of various departments of national law. From a macro perspective, observing the negative impact of the Metaverse on the governance of the entire legal system, the obstacles and limitations to the rule of law governance in the Metaverse, in order to clarify the optimal goal for overall

improvement.

First, the conflict between the Metaverse and traditional centralized models. On the one hand, the “new rules” of the Metaverse have sparked a conflict between “decentralization” and “building centralization.” Currently, these two logical rules are interdependent and antagonistic. For example, the issue of social and spatial limitations, decentralization aims to break through these limitations to better achieve social freedom, and through advanced technology, to more quickly, flexibly, and accurately understand information from distant others. However, this is limited to the virtual world of the Metaverse, just as online chatting is easier than face-to-face conversations. Society is in the process of transitioning from a society of acquaintances to a society of strangers, and social behavior is in an “awkward period.” If we follow this transformation of the real world and build centralization according to traditional logic, it is also a reasonable choice. This reflects a conflict in the direction of development. On the other hand, under the influence of the cultural function of society, the series of new things that the Metaverse has brought to the legal community make it difficult for some groups to adapt, such as the elderly who find it hard to accept new things.

Second, the Metaverse poses challenges to legal order. The “new rules” of the Metaverse have brought about changes and reorganizations in digital ecological models, power distribution, and intelligent constraints. The characteristics of digital ecology dominated by intelligent interaction and algorithms make it difficult for legal norms to fully and effectively cover and adjust them. Changes in power bring great risks. In addition, intelligence makes governance rules subject to the constraints of technological development, and these challenges all interfere with the legal order. As for specific manifestations, social deviance is the best example: moral, economic, and security fields frequently show Metaverse user behavior that is unregulated, with many users violating moral principles out of greed for new things, or breaking real-world rules and order due to their obsession with virtual settings [13][14].

Third, the Metaverse brings many risks to the rule of law governance, which is closely related to the “high risk” characteristic of the Metaverse. Taking administrative regulation as an example, the arrival of the Metaverse has brought three major risks: First, the risk of identity anonymization, where virtual technology allows people to have multiple virtual identities and anonymize their real identities, which can hinder cooperation; second, the risk of data centralization, where information security risks increase, and it is easy to violate personal information and privacy, hindering the innovation of market entities; third, the constraints and management powers of the Metaverse are complex and have a significant risk of alienation, such as the power of the algorithm layer, which can easily lead to monopolistic economic activities and the manipulation of social concepts [15].

It is clear that the obstacles of the Metaverse to the rule of law governance are mainly reflected in three aspects: conflicting with tradition, challenging order, and causing risks, providing a followable approach for overall improvement strategies.

## (2) Micro Perspective: Specific Legal Issues

The systematic development of the legal governance system is undoubtedly important, but when it comes to the content of the law, it is composed of numerous legal entities and their interlegal relationships. Therefore, adopting a logical approach from the whole to the parts, and using the traditional division of law, we can specifically analyze the legal issues brought by the Metaverse from the perspectives of public and private law, thereby exploring the challenges in adjusting the relationships between the state and citizens, as well as between equal subjects.

The typical public law issues brought by the Metaverse can be divided into three aspects: First, in terms of criminal law, the virtual technology of the Metaverse can easily lead to a significant increase in virtual economic crime and training issues, with phenomena such as money laundering, fraud, and pyramid schemes becoming more prevalent. Second, in terms of social law, the emergence of the Metaverse can easily raise questions about the demarcation between reality and virtuality within and outside the universe. Third, in terms of economic law, due to the “new rules” and “new technology” characteristics of the Metaverse, it is unmatched by scientific and technological advancements worldwide, which can easily lead to issues primarily centered around monopoly and the need for special regulation.

For private law, the issues brought by the Metaverse are mainly reflected in the protection of rights. Firstly, since the virtual world is unprecedented, the private law attributes of virtual identities have become a difficult issue to define, and the difficulty in defining them can severely hinder the implementation of the law. Secondly, the Metaverse has broken traditional rules, making it necessary to further refine the management of multiple rights, such as property rights, intellectual property rights, and privacy rights. For example, property rights have generated a new object, namely virtual property rights, which significantly increases the complexity of rights protection [16].

## 4. Countermeasures

It is imperative to improve the legal system of the Metaverse. A robust legal system not only ensures that digital transformation does not create a vacuum of rights but also creates a stable and predictable environment for the development of the digital industry, which undoubtedly plays a significant role in promoting the digital development represented by the Metaverse.

How to specifically improve the legal system of the Metaverse? Countermeasures should be proposed and organized one by one in response to the many legal issues brought by the Metaverse:

### 4.1 Strengthening Chinese Characteristic Rule of Law Governance

In addressing the conflicts between new entities and traditional models, it is necessary to “extract the essence and discard the dross,” building upon traditional models to

achieve creative transformation and innovative development, thus preventing the drawbacks of absolutist development.

The “essence” of traditional models lies in preserving the morals, ethics, and social relationships of real society, with digital legal governance following reasonable social rules. The “dross” refers to the inflexible conservative ideas in real society, such as dogmatism that legal forms cannot change.

Creative transformation and innovative development are both targeted at the characteristics of the times. On one hand, in the new era, as we strive towards the second centenary goal, a legal system with Chinese characteristics is particularly important and a significant measure in advancing the rule of law. On the other hand, it should adapt to the requirements of Chinese-style modernization, developing a green Metaverse to fully empower carbon neutrality as a modernization that coexists harmoniously with nature. As a modernization with a vast population, the use of Metaverse technology should be expanded to all citizens. As a modernization that coordinates material and spiritual civilization, Metaverse technology should meet both material and spiritual needs of humanity [20].

#### 4.2 Adjustment of Metaverse Legal Order

The adjustment of the Metaverse legal order can start from the Metaverse itself, strictly regulating it according to its internal layers. At the physical layer, strengthening computational power can support its deployment, thereby enhancing people's ability to distinguish between the real and virtual worlds, preventing addiction. At the data layer, guiding its development by regulating the collection and use of data is possible. Algorithm applications must ensure that algorithms are used for good purposes, etc. In addition, to address issues related to social norms, social control in the Metaverse should be strengthened to promote law-abiding citizenship among all people.

#### 4.3 Leveraging the Innate Regulatory Role of Law

Law has a certain degree of innate momentum and can self-adjust according to the “edges and corners” of new things. The many legal issues brought by the Metaverse can be effectively mitigated by the law's innate regulatory role. Taking blockchain technology as an example, future legislation can further clarify many key concepts of personal information protection, thereby reducing the uncertainty of legal application. Truly legislating with full consideration of the characteristics of blockchain technology, fundamentally constructing standards for identifying responsible entities and responsibility systems suitable for the development of blockchain. In this example, legislative bodies enacting scientific laws serve as a “catalyst” for the law's innate regulatory role, and there are many other agencies and procedures in the rule of law governance process that can become “catalysts” by strengthening themselves. [21]

#### 4.4 Multi-Stakeholder Co-Governance under the Leadership of Party Building

In response to the specific legal issues brought by the Metaverse at the micro level, different legal issues can be best

addressed by their corresponding legal institutions.

From the perspective of China's national power operation and governance structure, the Communist Party of China, as the ruling party, has the ruling power and plays a leading role for all political parties and peoples. Therefore, improving rule of law governance can start with the strength of the Party, leading the people in thought and organization, correctly understanding and using the Metaverse cautiously. Following the sequence from the birth to the implementation of the law, the exercise of legislative power marks the birth of the law, the exercise of executive power promotes the implementation of the law, the exercise of judicial power maintains social fairness and justice through the implementation of the law, and the exercise of supervisory power runs through the entire process of law implementation, reflecting the use of the law by citizens. Therefore, improving the rule of law governance of the Metaverse should be carried out at five levels: leadership by party building, scientific legislation, strict law enforcement, fair judiciary, and law-abiding citizenship, focusing on the joint practice of multiple stakeholders.

Firstly, legislative bodies should enact new laws, good laws, and sound laws. They should establish laws that align with the will of the people, meet the new characteristics and requirements of the Metaverse, follow the development trends of the new era, and comply with the requirements of our country's modernization construction. The aforementioned legislative improvement ideas for blockchain technology are the best examples.

Secondly, law enforcement agencies should fully exert the preventive power of administrative regulation. This is precisely to better address the issue of the magnification of risks at the administrative level. For example, to tackle the risk of identity anonymization, authenticity regulation can be adopted, and the government should build a unified national intelligent Metaverse identity authentication platform.

Furthermore, judicial authorities face challenges as the Metaverse makes it difficult for legal norms to effectively cover and adjust, the interpretive power of rule logic becomes increasingly difficult, and the judicial dispute resolution mechanism encounters significant obstacles. To address this issue, judicial authorities should strengthen information construction, refine work measures, improve implementation details, value the cultivation of mediation forces, and enhance the professional level of mediation teams, strengthening the internal motivation for multi-party dispute resolution. Lastly, it is necessary to strengthen the supervision and guidance of courts to improve the level of legal services.

Finally, to better achieve law-abiding citizenship among all people, social control can be strengthened through incentive mechanisms, social propaganda, and social education. For example, the government can organize Metaverse legal publicity lecture activities to let more people understand the new legal changes brought by the Metaverse.

In summary, each micro-stakeholder performs their duties and works together, following the new macro approach to rule of law governance, thereby significantly improving the macro level of the entire legal system. By addressing the legal issues

brought by the Metaverse from point to surface.

## 5. Conclusion

In summary, the legal issues brought by the Metaverse can be divided into two perspectives. The macro perspective of rule of law governance obstacles includes conflicts between the Metaverse and traditional centralized models, challenges to legal order brought by the Metaverse, and many rule of law governance risks brought by the Metaverse. The micro perspective includes many specific legal issues for both public and private law.

The countermeasures to these legal issues include strengthening Chinese characteristic rule of law governance, adjusting the legal order of the Metaverse, leveraging the innate regulatory role of law, and multi-stakeholder co-governance under the leadership of party building. These four strategies can basically effectively address the aforementioned issues and are four practical paths.

Finally, while effectively addressing the legal issues brought by the Metaverse, we should dialectically view the development opportunities and governance challenges brought by the Metaverse, and reasonably use the role of the Metaverse to promote the development of human civilization.

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