Establishing Intellectual Property Rights on Data Through Categorization

Xuchen Gao
Law School, Minzu University of China, Beijing, 100071, China

Keywords: Data, Intellectual Property, Categorization.

Abstract: Contemporary information network technology is advanced, and various types of data, as an indispensable element of various industries, have given rise to numerous exclusive disputes. The existing legal system has limitations on data protection. The current relevant policies only provide guidance on the direction, but do not provide a structured system or specific laws and regulations. The purpose of this paper is to briefly discuss the way to establish intellectual property protection for data through categorization, to include data in the scope of intellectual property protection, and to solve data disputes with the protection rules of intellectual property law. Among them, categorizing different data based on the way data is accessed and the various forms of data during its lifecycle are the main views at present. In addition, the degree of publicity of data and special data are also considered in this paper. By categorizing and setting up rights through the different characteristics of data, appropriate protection can be provided to various types of data in a targeted manner, in order to achieve an organic combination of the exclusivity of data due to its property nature and the mobility of data due to its marginal incremental benefits.

1 INTRODUCTION

1.1 Research Background

Before the publication of specific legal provisions based on intellectual property rights, the relevant documents issued in China provided a series of theoretical and ideological guidance for the establishment of data property rights. In December 2022, the CPC Central Committee and the State Council issued the “Opinions on Building a Data-Based System to Better Utilize the Role of Data Elements”, which further put forward the “Data Classification and Rights Setting” and “the establishment of a reasonable and practical data property rights system that protects rights and interests” (Shan, 2023). The ideological and policy foundations have been laid for legislative activities to empower intellectual property rights in data property.

Currently, the law system for data security, which is linked to the further development of data, is a system of data security regimes guided by the State Security Law of the People's Republic of China, Cybersecurity Law of China, the Data Security Law of the People's Republic of China, and Personal Information Protection Law of the People's Republic of China as the main elements (People’s Publishing House, 2015 … Wu, 2023). However, the specific legal system to promote the development and utilization of data has not yet been sound and complete. On the premise that the basic system architecture has been basically formed, how to supplement the specific laws and regulations that are conducive to protecting data security and stimulating the creativity of data has become a topic of focus.

1.2 Research Significance and Theme

The current social network technology is unprecedentedly developed. As a product of network technology, the importance of data is also increasingly prominent. According to the Communique of the Third Plenary Session of the 20th Central Committee of the Communist Party of China, Accelerate the establishment of a data property rights management system that can facilitate the identification of data ownership, promote market transactions of data and ensure the protection of data interests. At the same time, data security governance and regulatory capabilities need to be upgraded, and an efficient, convenient and secure mechanism for

Gao, X.
Establishing Intellectual Property Rights on Data Through Categorization.
DOI: 10.5220/0014359200004859

In *Proceedings of the 1st International Conference on Politics, Law, and Social Science (ICPLSS 2025)*, pages 191-196
ISBN: 978-989-758-785-6

cross-border data flow needs to be established (Central Compilation & Translation Press, CCTP, 2024). In the era of network information, the property attributes and circulation and utilization needs of data are increasing day by day, and more and more data disputes have generated expectations for the allocation of data property rights. Reasonable data ownership planning helps to coordinate the interest relationship between data owners, standardize the data circulation and utilization behavior, so as to stimulate the creative value of data to a greater extent.

The purpose of this paper is to analyze the current situation of data protection in China through existing laws and relevant policies, and to introduce the necessity of including data into the scope of intellectual property protection. At the same time, it discusses the feasibility of incorporating data into intellectual property rights by classifying different types of data and solving data disputes with the protection rules of intellectual property law.

2 CURRENT STATUS OF RESEARCH ON THE INCORPORATION OF DATA INTO INTELLECTUAL PROPERTY RIGHTS

In terms of the guarantees of private power, the theoretical possibility of incorporating data into intellectual property rights remains widely debated. There are currently two broad propositions.

2.1 Supporting the Incorporation of Data into Intellectual Property Systems

Those who support the inclusion of data in the intellectual property system believes that: data has the characteristics of non-materiality, non-competition, non-consumption, innovation, etc., and they are similar to those of the object that intellectual property rights protect. Including it into the intellectual property law system has a legitimate object basis, but the establishment of intellectual property rights of data in two different ways (Gao, 2025). One indicates that the current data as an independent object of intellectual property rights, still remains in the justification, path design and other theoretical discussions. The specific system design for data object still needs a long time of in-depth research and prudent judicial empirical evidence. The second is based on the characteristics of the object of data and the attribution of its rights, and advocates that the protection of data should be incorporated into the information property right or listed as a special right in the field of intellectual property, that is to say, the protection of certain special information under the existing intellectual property system.

2.2 Objecting the Incorporation of Data into Intellectual Property Systems

Opposition to the inclusion of data in intellectual property law is based on two main reasons: first, the “non-creative” nature of data. Data property is not the product of human creative labor, so its inclusion in the scope of objects protected by intellectual property rights lacks the necessary conditions to be compatible with it. Second, the “non-exclusive” of data. In the traditional field of intellectual property rights, the rights of “proprietary” reflected in the exclusive right, control and uniqueness of the subject . For data, due to the development of the current social network, coupled with the inherent flow of data attributes, determines the need to set up its exclusive right or control is still to be considered. At the same time, based on the marginal incremental benefits of data, mobility is one of the most important factors to add its value. Therefore, it is difficult to apply the principle of uniqueness similar to “one patent for one invention” in Patent Law of the People's Republic of China to the field of data (Intellectual Property Publishing House, 2024).

3 THE NECESSITY OF ESTABLISHING INTELLECTUAL PROPERTY RIGHTS IN DATA

3.1 Inadequacy of Data Protection in the Existing Judicial System

While the importance of data is increasing, there are also numerous cases arising from data disputes. However, at present, a considerable number of data dispute cases are still focused on the Anti-Unfair Competition Law. Highly publicized cases include Dianping v. Baidu, Sina Weibo v. Today's Headlines, and other cases involving unfair competition in data portability. The Anti-Unfair Competition Law of the People's Republic of China, as a kind of behavioral

regulation law, is more inclined to adopt a kind of negative ex post facto protection (Law Press China, 2019). In addition, most of the law applies to subjects with competing interests, thus limiting the strength and scope of its protection. At the same time, due to the lack of targeted laws and regulations, the laws and regulations invoked by judges in adjudicating this type of cases, and even the measurement of the value of individual cases, may be biased due to subjective reasons, and sometimes may even lead to different judgments in the same type of cases.

3.2 Advantages of the Intellectual Property System for Data Protection

In addition to the shortcomings of existing laws, intellectual property law has natural advantages for the protection of data. For example, intellectual property law can clearly define the owner of the rights to data. In the copyright law of China, for data objects with originality, such as data collection or data works, it is clear that the creator is the owner of the rights; in the laws and regulations related to trade secrets, it is clearly stipulated that the enterprise, as the controller of the data and the implementer of the confidentiality measures, is the owner of the rights of data. A clear attribution of rights can effectively reduce the ownership disputes arising from the use and circulation of data. At present, some regions are carrying out data intellectual property registration work on a pilot basis, such as Beijing and Shanghai. The registration system provides data with proof of ownership, which further strengthens the certainty of the attribution of rights (Tang, 2024 & Zhang & Deng, 2023). This shows the advantage of intellectual property rights in clarifying the subject to which the data belongs.

At the same time, intellectual property law is a relatively more comprehensive system of legal norms that is showing a state of expansion. In its existing field, new systems are constantly being established and incorporated into the intellectual property legal system, becoming new members of its encompassing scope, such as new plant varieties, industrial copyrights, genes, etc. (Xiao, 2024). Old systems, such as trade secrets, are also being absorbed. This shows that intellectual property rights can encompass a wide range of objects, and of course, can also provide more targeted protection for different types of data. For example, data collections, programming programs and their documentation with originality can be protected by copyright law. Data that meets the requirements of "secrecy", "confidentiality" and "value" can be protected as trade secrets. This type of protection prevents data from being stolen, maliciously acquired, disclosed and used, and can effectively protect the data assets of an enterprise with a competitive edge.

4 DETERMINATION OF THE SCOPE OF PROTECTION BASED ON THE CLASSIFICATION OF DATA

Distinguishing between different types of data is an important prerequisite and basis for determining whether data can be included in the scope of intellectual property objects, and it is not appropriate to generalize between different types of data. Therefore, it is more appropriate to categorize data to set rights (Feng, 2024 & Ding, 2023). Classification is mainly based on the way of data acquisition and the degree of creativity of human involvement. Specifically, the existing theories include the following classifications :

4.1 Raw Data and Derived Data

Data can be categorized into raw data and derived data according to the source, mode and degree of processing of the data. Raw data refers to the unprocessed data obtained directly from the person being recorded in a legal way, and the most common raw data are: user login information, data backups left on the Internet, payment information, etc. Derivative data is data that can be read after desensitizing, anonymizing, processing, calculating, aggregating and other technical treatments of the original data using technical algorithms based on a specific purpose. Raw data can come from human behavior, such as network clicks, inputs, records, etc., or from devices such as smart cars, mobile wearable devices, etc., which are automatically generated by machines. Derivative data usually refers to the data producers to invest a large amount of labor, capital, and through data mining, production, processing and other procedures.

Based on the above classification standards, there are views in the "trichotomy" based on the refinement of the "dichotomy", that is, the derived data is further subdivided into the data collection and data products, plus the original raw data to form three types of data. Among them, the data collection is made from the raw data. Through classification, organizing and processing, the data collection is finally formed. Data

products are the property of enterprises that utilize algorithmic technology to creatively analyze the data collection, thereby producing new knowledge and transforming it into products or services based on a certain business model.

With regard to the "trichotomy", some scholars believe that derived data are basically confused with data products. The main reason is that derived data can be recognized as data products formed by network operators using algorithms or models to process original data in depth. Therefore, it can be seen that the "trichotomy" is not clear enough. However, no matter whether it is the "dichotomy" or the "trichotomy", it is not difficult to see that if property rights protection is set up for data, the category of raw data should be excluded in the first place.

First, the object protected by intellectual property rights is based on its "creativity". Raw data is mostly manifested in the collection and organization of data, and does not have the characteristic of "creativity". Secondly, as the initial source of other types of data, the establishment of property rights protection for raw data will undoubtedly greatly impede the further mobility of information, thus reducing the benefits brought about by marginal incremental benefits. Finally, data intellectual property rights are intended to provide a reasonable expectation for creative labor over and above the cost of labor, so as to stimulate the main body of the data for in-depth excavation, processing, innovation and creativity of the motivation, so the unprocessed data should not be rewarded. The establishment of intellectual property rights for derived data should not be generalized, and should be judged after a comprehensive consideration of its creation process, data characteristics and other factors.

4.2 Data Resources, Data Elements and Data Products

According to the different stages and value forms of data in the whole life cycle, data can be categorized into data resources, data elements and data products. This is a dynamic classification, data in the dynamic flow and form of evolution shows its value gradually increasing regularity. Based on the principle of big data technology, data can only release its multiplier effect on economic and social development through massive aggregation and large-scale availability. In this sense, data resources must remain open, and should not be set up for its exclusive property rights.

To a certain extent, data resources and data elements have common features with the raw data discussed in the previous section, and there is no need to establish property rights for both of them. In contrast, data products, different from the derived data mentioned above, its development and production of which is highly dependent on technology and has a greater property value and product form, and can be regarded as an independent property object; while the derived data, although processed by human beings, its degree cannot meet the requirements of the "product". In addition, the two types of data are categorized on different bases. Derived data is classified according to its source and the degree of processing, whereas data products are classified according to the life cycle of the data, or its position in the production chain. Often, data products have the attributes of intellectual property and the basis for setting up intellectual property rights. Firstly, data products are characterized by their non-materiality, informativeness, innovativeness and commercial value, which distinguish them from tangible objects and raw data. Secondly, data products are creative achievements, which are the creative labor results presented in the form of knowledge. They are created by the developers of data products through algorithms, numerical power and other digital technologies. Therefore, data products meet the characteristics necessary for the object of intellectual property protection, and at the same time, their unique asset attributes also require the establishment of protection measures. Thus, data products have the highest compatibility with intellectual property rights.

4.3 Public Data and Non-Public Data

Data can be categorized into public and non-public data according to whether they are public or not. Theoretically, in view of the natural mobility of data and the nature of social resources, open data means that such data have entered the public domain, and the public can obtain the right to access and use the data without authorization and payment of transaction fees, but not necessarily including access and use for the purpose of profit.

Compared with public data, non-public data refers to data that are not disclosed to the society. According to this attribute, non-public data and intellectual property objects in the trade secret has a strong correlation, non-public data if meet the "secret, confidentiality and commercial value" of the recognition of the conditions, can be included in the scope of protection of trade secrets, but also by the protection of intellectual property law.

First of all, whether the data satisfy the secrecy depends on the openness or closure, to a certain extent, related to the type of data, although the non-public data has the basic conditions of secrecy, but whether it constitutes a trade secret, but also need to be combined with the commercial value of its confidentiality measures to make a comprehensive judgment. Secondly, due to the aggregation of data, relevance, scene dependence, non-competition and non-exclusivity and other characteristics, the judiciary lacks a unified standard for the determination of "confidentiality", and according to the practice of the practice, the data access level restrictions, the use of technical protection measures are generally regarded as meeting the conditions of "confidentiality". The practice is that restrictions on the level of access to data and the application of technical protection measures are generally regarded as fulfilling the conditions of confidentiality. Finally, as to its commercial value, China's 2017 revised Anti-Unfair Competition Law of the People's Republic of China changed the words "can bring economic benefits to the right holder and has practicality" to "has commercial value" for trade secrets. Usually, commercial value refers to the ability to bring real or potential commercial benefits or competitive advantages to the right holder. However, in response to the inclusion of data in the scope of trade secret protection, it has been pointed out that trade secret protection is not suitable for the data economy and that this is "a further strengthening of factual exclusivity at the legal level".

4.4 Specific Types of Data

According to the importance of data and the degree of harm caused by illegal access and utilization, China's three pillar laws in the field of cyberspace security, namely, Cybersecurity Law of China, Data Security Law of the People's Republic of China and Personal Information Protection Law of the People's Republic of China, classify data into core data, important data, and general data, and adopt different rules for the protection of these categories of data. This category of data basically manifests itself in the personal or national security category, such as data that "may jeopardize national security, economic operation, social order, and public interests" in the Cybersecurity Law of China, such as infrastructure data in the fields of energy, transportation, and so on. In the Data Security Law of the People's Republic of China, there are data "related to national security, the lifeline of the national economy, important people's livelihoods, and major public interests, such as national defense science and technology data and strategic resource reserve data." This type of data should not be included in the intellectual property system because of its special characteristics.

5 CONCLUSION

As can be seen from the above arguments, the existing protection system for data obviously has drawbacks. The intellectual property protection system is more compatible with the object of data, and it can provide a certain degree of protection to data whether based on the owner of its rights or the data itself as an object. With regard to the process of establishing intellectual property rights for data, it is necessary to categorize data according to their different characteristics. The establishment of intellectual property rights on the basis of the degree of human intervention, uniqueness and innovativeness of data can provide protection for the subject of the rights of the data and maximize the mobility of the data, so that it can effectively preserve and increase its value.

REFERENCES

Central Compilation & Translation Press, CCTP, 2024. Communique of the Third Plenary Session of the 20th Central Committee of the Communist Party of China.

China Legal Publishing House, 2021. Personal Information Protection Law of the People's Republic of China.

D. M. Xiao, 2024. Can "data" be included as an object of intellectual property rights, JPSL, 144.

H. D. Wu, 2023. The legislative choice of data property empowerment, SL, 48.

Intellectual Property Publishing House, 2024. Patent Law of the People's Republic of China.

L. Gao, 2025. The dilemma of data intellectual property rights empowerment and cracking JAJ. 186.

Law Press China, 2016. Cybersecurity Law of China

Law Press China, 2019. Anti-Unfair Competition Law of the People's Republic of China.

People's Publishing House, 2021. Data Security Law of the People's Republic of China.

People's Publishing House. 2015. State Security Law of the People's Republic of China.

S. H. Zhang, P. Deng, 2023. Legal realization of structural Separation of Data Property Rights, OL, 79.

X. D. Ding, 2023. Jurisprudential reflection and institutional reconstruction of fair utilization of data, CJL, 27.

X. G. Shan, 2023. The choice of China's program of data intellectual property rights, F, 40.

X. Q. Feng, 2024. Legal construction of data property rights, JPSL, 126.
Z. Y. Tang, 2024. Institutional logic and improvement of data intellectual property rights registration, IP, 41.