Intellectual property protection of big data

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Abstract. With the rapid development of artificial intelligence technology, the application of big data becomes more and more popular in the 21st century. Through unremitting efforts, China has successfully joined the ranks of the big data countries and entered the big data era. However, while people enjoy the convenience of global big data, the problem of intellectual property protection of big data remains to be solved. Based on the analysis of the current situation, difficulties and causes of the intellectual property protection of big data, this paper puts forward the suggestion that the new big data should be an independent object of intellectual property within the framework of the existing intellectual property protection system, in order to provide better protection for big data.

1. Introduction

The concept of Big Data was first mentioned in nature's "Big Data" issue in 2008, when Kusnetzky Dan defined Big Data in What is "Big Data" as: the inability to manage, process, capture, and organize large amounts of information in a short period of time for humans to read. But up to now, the definition of big data, academia and industry due to different focus, has not yet reached consensus. The definition of big data in the circular of the State Council of the People's Republic of China on the issuance of the Action Plan for the development of big data adopts the way of generalizing characteristics, namely the "4V" standard, it is clear that big data is a data set with the characteristics of large volume, variety, velocity and value.

In addition, it is increasingly recognized that in addition to the "4V" criteria described above, veracity is also an important feature of big data. Because on the one hand, big data is to capture the behavior of the habitual network of non-specific subjects, there is concealment, so the information captured by big data often reflects people's most real thoughts. On the other hand, because the sample collected by big data is not a traditional sampling survey, but a study of all data, it can truly and comprehensively reflect the real situation of society.

These characteristics of big data determine that big data as a new asset, as countries and enterprises to enhance the competitiveness of an important means. But for the protection of big data, the world has failed to come up with a specific solution. As far as China is concerned, there is no special legislation on the protection of big data in China. The existing intellectual property system can only provide limited protection for big data, and can not solve the problem comprehensively and effectively. Therefore, the combination of big data protection difficulties, further improve the existing intellectual property system, is conducive to the real solution to the protection of big data intellectual property.
2. The current situation of intellectual property protection in big data

2.1. Copyright protection
In the era of big data, the copyright Law of our country mainly protects big data through compiling works. Article 14 of the Copyright Law defines the compilation of works as: "The compilation of a number of works, fragments of a work or data or other materials that do not constitute a work, the selection of its contents or the arrangement of works that embody originality shall be a compilation of works." According to the provisions of the law, the definition of assembly works and the concept of big data can be understood as a collection of certain elements. This means that the compilation can actually be understood as a collection of original data with the provisions of the copyright law. If the information formed by big data is selectively arranged and can reflect its originality, it can be protected by copyright law as the object of copyright.

The collection of information by big data controllers often needs to be distinguished and correlated. Although the amount of information is large and constantly changing, it can undoubtedly reflect the value choice of big data controllers themselves. Therefore, the big data information obtained by data users in different big data controllers is often not similar, and even adopts a diametrically opposite arrangement, which of course reflects their own information selection and arrangement. Meet the original requirements of the compilation work. It can be seen that the copyright protection of big data is realistic.

2.2. Protection of trade secrets
Trade secret is the object of intellectual property specified in Article 123 of the Civil Code of our country. In addition, the protection of trade secret is stipulated in the Criminal Law and the Anti-unfair Competition Law of our country. Unlike other intellectual property objects, the protection of trade secrets has no limitation on the duration of rights, and the newly revised Anti-unfair Competition Law in 2019 has greatly improved the scope and intensity of the protection of trade secrets. If big data can meet the constitutive requirements of trade secrets, that is, "technical information, business information and other business information known to the public and of commercial value and taken corresponding confidential measures by the obligee", the protection system of trade secrets can be used to realize the protection of rights.

Big data meets the requirements of trade secrets, that is, confidentiality, value and confidentiality. First of all, big data meets the requirements of secrecy, because the essence of big data is the collection of information. The user is willing to provide his own information to the big data controller, which must be based on the confidentiality agreement signed by both parties, which gives the big data controller the obligation of confidentiality, that is, without proper basis, the user information can not be leaked. Of course, big data controllers, based on market competition, also keep the collected information confidential in case competitors seize the advantage of the market. Secondly, the commercial value of big data is obvious. In the wave of global economy, massive big data is the magic weapon of a country and enterprise. The purposeful development and analysis of these data is a valuable information resource, which is conducive to scientific decision-making by countries and enterprises. Not only that, big data controllers can also sell big data for profit, with considerable economic value. Finally, in terms of confidentiality, big data controllers often improve the security of big data management through system upgrades to prevent hackers from invading and causing data leaks. To sum up, trade secrets provide protection for big data is feasible.

3. The predicament and reasons of intellectual property protection of big data
As mentioned earlier, big data can theoretically protect copyright or trade secrets, but it still faces difficulties in practice.

First, the purpose of copyright is to protect the originality of the work, and the collection and collation of information about big data reflects originality to varying degrees, but at its core is the ability and breadth of data collection rather than the depth of originality. It is easy for big data
controllers to ignore the arrangement of data while pursuing quantity, so that big data can not meet the requirements of originality. At this time, the originality of big data is low and can not meet the requirement of originality in copyright law, but the big data controller still pays a lot of time and economic cost for the collection of information, and it is necessary to protect its rights. The existing copyright Law does not provide an effective solution for this.

Secondly, the identification of big data, a trade secret, lacks a clear and unified standard. Specifically, to what extent do the confidentiality measures taken by big data controllers need to be considered "reasonable"? How to determine the secrecy of big data? In the era of dataization, users will leave traces of online shopping, browsing web pages and so on, so the collection of data information becomes more convenient and diversified, which also leads to differences in the determination of big data secrecy. Unfortunately, existing legislation did not provide a clear answer to this question.

Of course, in addition to the limitations of existing legislation, big data infringement has the characteristics of concealment and the severity of damage consequences, which is also an important reason for the plight of big data intellectual property protection. Different from the infringement of personal and ordinary property, big data infringement is often operated through network technology, and even does not leave a trace of infringement, which is difficult to be found by big data controllers at first. However, when big data is discovered, it has caused serious damage.

4. Proposal to make big data a separate object of intellectual property

4.1. Necessity

Big data has lowered the threshold of social innovation, brought new innovation models, and greatly changed the market competition environment. It can be said that the development of big data not only changes our lives in the present, but also leads the development of society in the future. So the construction of big data intellectual property protection model should be based on a long-term perspective. Although the copyright protection and trade secret protection of big data do have some applicable space, it is not a reasonable solution to improve the intellectual property protection of big data by expanding the object scope of copyright or changing the burden of proof of trade secret infringement.

Therefore, in view of the complex attributes of big data itself, the author thinks that when big data develops and matures, it can stipulate big data, a new type of intellectual property object, within the framework of the existing intellectual property legal system.

4.2. Specific content design

The addition of an object of intellectual property is not just a few legal provisions, but a balance of interests. This paper can not include all the contents of the system, hoping to provide relevant ideas through the protection period and the increase of tort punishment.

The term of protection should be defined in the legislation that the obligee can protect big data indefinitely. Although the protection of intellectual property is generally limited, for example, the maximum protection period of invention patent in China is 20 years, and the maximum protection period of utility model is 10 years. There are also "50 years "provisions in Copyright to protect the right of publication and the property right of works. But in view of the higher similarity between big data and trade secrets in content, value and so on, the protection period of big data can refer to the provisions of trade secrets. In order to increase the punishment of tort, the standard of punitive damages should be clearly defined.

Article 1180 of the Civil Code stipulates:" If the circumstances are serious, the infringed party shall have the right to request the corresponding punitive damages." The principle of punitive damages for intellectual property is not clear what is "serious" or the amount and standard of punitive damages. In the future big data intellectual property legislation, we can refine this provision of the Civil Code and play a substantial deterrent role to infringers.
5. Conclusion
The existing intellectual property legal system has many shortcomings in big data protection, and big data is in the rapid development stage, and there will be new problems and new situations. Now the new intellectual property type of big data is too urgent, which can easily lead to legislation can not adapt to the development of big data, but we should still realize that the separate legislation of big data is driven by the general trend, just waiting for the opportunity.

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