

# *Research on the protection of enterprise digital intellectual property rights*

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**Abstract:** With the unstoppable entry of "digitalization" into human production and life. As one of the application fields of digital technology, the legal protection of enterprise intellectual property rights must respond to the right demands of society and users in a timely manner. The expansion of the scope of intellectual property protection has brought many problems. On the one hand, it is difficult for enterprises to establish their research and development results in the form of intellectual property rights. On the other hand, patent infringement disputes mainly involving active and deliberate infringement often occur. The reason lies in the low cost of infringement, and the imperfection of legal procedures, which leads to the increase of the cost of rights protection. Based on this, we must insist on strengthening the whole chain protection of intellectual property rights, advance through multiple channels, cooperate with each other, build a large protection pattern, and improve the protection system from multiple angles.

## 1. Introduction

Innovation is the primary driving force for economic development, and the priority of protecting innovation is to protect intellectual property rights. At present, China's economy has entered a stage of high-quality development, and economic development has switched from the traditional elements to innovation-led, and intellectual property has gradually become a key element of industrial upgrading and innovation. To stimulate the vitality of market players, strengthening intellectual property protection is an important part of various measures. One end of intellectual property is connected to innovation, the other end is followed by the market, which is the link between science and technology and economy, and is becoming the supporting force for enterprise development. However, because most enterprises, especially small and medium-sized enterprises, still have some problems in the protection of intellectual property rights, the role of intellectual property rights in stimulating innovation is difficult to effectively play, and transformation and upgrading, innovation and development have encountered bottlenecks. Looking around the world, international economic and trade rules are undergoing profound changes. Intellectual property protection has become a hot spot in high-standard international economic and trade rules, and the focus of attention of all parties. Whether it is transnational industrial technology cooperation, or "going out" to explore the international market, China's intellectual property protection has put forward higher requirements. One is that intellectual property has become more intangible.<sup>[1]</sup> Intellectual property involves more

and more fields, in this intangible carrier, the difficulty of intellectual property protection is gradually increasing. Second, the regionality of intellectual property rights has been correspondingly broken, intellectual property rights need to be protected by law, and the Internet has the characteristics of openness, virtuality and borderless, the intellectual achievements created by the Internet can be spread globally, in the legal environment of different countries, intellectual achievements are easily diluted, it is impossible to distinguish whether there are infringements. Thirdly, the exclusivity of intellectual property has been challenged to some extent. The Internet is more convenient and technology-oriented. When information exists in the network, it will become public information, and anyone can get all kinds of information online in a convenient way, and also transfer it to others through the network, which includes a lot of intellectual property information, constituting intellectual property infringement. In recent years, the whole society's awareness of intellectual property protection has been significantly improved, and more and more enterprise managers are aware of the basic concept and importance of intellectual property. From the perspective of practice, there are differences in the cognition and ability of enterprises for intellectual property rights, which can be roughly divided into several types.

First, the "know and don't know" type: A large number of enterprises' cognition of intellectual property protection is limited to passive requirements in various qualification declaration, evaluation, award and other activities, and they only know that enterprises have intellectual property rights stipulated by law and should protect intellectual property rights, but their understanding of intellectual property rights is limited to the "quantity" level, and the role and treatment of these intellectual property rights are still vague. Such enterprises often have not yet faced intellectual property challenges in real business environments, and lack the ability to use legal thinking and legal methods to clarify intellectual property protection. Intellectual property protection generally manifests itself as some transactional work.

Second, "know but do little" type: some enterprises have a deeper cognition and understanding of the value and significance of intellectual property, for example: know that intellectual property is to delineate a scope of rights and build a defensive wall; Knowing that if a business owns intellectual property, it can gain a competitive advantage by "asserting its rights" against competitors, sometimes protecting business interests from lawsuits, and so on. However, the intellectual property practices of enterprises at this level are not much, and "defensive" work is more than "profit-driven" work, often "one case" and "one case to solve one case" (for example, a lawsuit is filed against a product after it is found to be infringing, and a targeted response is filed after being sued, etc.). The intellectual property protection of this type of enterprise is generally manifested as legal work.

Third, "skilled use" type: enterprises at this level have mastered the ability to flexibly use intellectual property rights in a series of business scenarios, and intellectual property rights have been well integrated into various aspects of enterprise research and development, production, marketing and so on, playing an important role in operation and development. Enterprises can be more skilled in using intellectual property as a "weapon" (strategic litigation, cross-licensing, etc.) or a "tool" (analyzing hot spots and gaps in industrial development, etc.) to carry out competitive work. Enterprises deeply understand that "the right lying in the hand is also a cost", and begin to pay attention to how to reduce the cost of applying for and maintaining intellectual property portfolio, control costs, and systematically evaluate the balance of intellectual property risks and benefits. The intellectual property protection of this type of enterprise is generally manifested as management work.

Fourth, "strategic development" type: Some international leading high-tech enterprises regard intellectual property as an important strategic asset, not only regard intellectual property as an internal management matter, but also look outside the enterprise, through insight into the future

development direction of the industry and consumer preference challenges, actively acquire intellectual property necessary to protect corporate profits and market share, and at the same time, take the initiative to explore.

## 2. The impact of the digital economy

With the rapid development of science and technology, "digitalization" has inexorably entered into human production and life, all kinds of information such as text, video, pictures, etc. can be used, stored and transmitted in the form of "digital code", and the development of technology has gradually brought the world into the era of interconnection of everything. This era is changing the way we live and understand the world, becoming a source of new inventions and services. As a field of application of digital technology, the legal protection of enterprise intellectual property rights must respond to the right demands of society and users in a timely manner, and be changed from all aspects. Traditional intellectual property is limited to science and technology, space and time, there are problems in information service, such as slow speed, must be on-site service. The promotion and wide application of information technology in the digital era has made the use of various spiritual civilization achievements, including intellectual property rights, break this restriction barrier, achieve qualitative changes in concept, ability, efficiency, mode and quality, and have a more inclusive and convenient humanized service. Secondly, to "online service". In the digital era characterized by digitalization and intelligence, the use of the Internet to conduct business has become the mainstream of society, and many service fields have shifted from "offline" to "online", which requires enterprises to actively act, not only to vigorously carry out digital transformation, but also to optimize the process and method of intellectual property utilization, and enhance the interaction between intellectual property and right holders.

The scope of intellectual property protection is also gradually expanding to digital "information", which involves objects that can be regarded as immaterial knowledge information,<sup>[2]</sup> including knowledge information, public information and commercial information. This is a new type of civil right, and it is a kind of spiritual rights and interests related to the fruits of human intellectual labor. It has a completely different form of existence and management from material property, neither the possession of material form, nor the loss of material form, let alone the fact of eliminating or delivering intangible products. Therefore, in order to protect these intangible information property rights, it is difficult to carry out through material possession and control, and it is necessary to give information creators and producers monopoly rights through legal forms, protect them within a certain time and scope, and encourage their motivation to continue to create, otherwise it will discourage the enthusiasm of creators. This is a contradictory choice, there must be a certain monopoly and control, and there must be a certain openness and utilization.

The development of digital economy not only has a significant impact on the internal and external environment, realistic conditions and institutional mechanisms of economic development, but also provides many opportunities for the innovative development of traditional theoretical research. But it also puts forward higher and stricter requirements for the legal protection of digital intellectual property rights.<sup>[3]</sup> In recent years, China's digital intellectual property legal protection system has received unprecedented attention, and the intellectual property system is becoming more and more perfect.<sup>[4]</sup> However, compared with the traditional digital intellectual property protection, the infringement phenomenon of digital intellectual property rights in the background of artificial intelligence has also occurred frequently. China's artificial intelligence technology has an increasing influence on digital intellectual property rights, and relevant laws and regulations are needed to regulate the infringement of digital intellectual property rights.

### 3. Problems in the protection of enterprise intellectual property rights

Although China has formulated a number of laws and regulations and normative documents to regulate the content dissemination behavior of information network, there are still many problems in the existing legal protection system of digital technology intellectual property. With the endless emergence of new technologies and new business models such as digital media, network broadcast and video games, the legal protection of copyright of network broadcast and short video games is becoming more and more prominent, which puts forward many new and urgent requirements for the legal protection of digital intellectual property rights in China. In the decades of development, China has initially formed a legal protection mechanism for digital intellectual property with the Copyright Law as the main protection, and the Patent Law, Trademark Law and Network Security Law as the supplement. In order to be consistent with the legal protection system of digital intellectual property at the time of the initial legislation, China regards the Copyright Law as the main means of protection of digital intellectual property, and implemented the Copyright Law in 1991 to provide a legal basis for the protection of digital intellectual property. The development of artificial intelligence technology has continuously expanded the scope and content of digital intellectual property rights, and incorporated traditional intellectual property rights into the digital legal system. In 2017, China implemented the Cyber Security Law, which further improved the laws and regulations on intellectual property in cyberspace, and set clear requirements for the capability and scope of intellectual property protection in cyberspace. In the context of artificial intelligence, digital technology promotes the improvement of the legal protection system of intellectual property rights, and provides favorable conditions for the establishment of a complete legal protection system of digital intellectual property rights in China.

From the perspective of practice, there are still the following problems in the protection of enterprise intellectual property rights: First of all, a large part of China's enterprises are still imitation industrial processing and manufacturing mode, the enthusiasm for technological design innovation is not high, including active intentional infringement and non-intentional infringement, including patent infringement risk is the most important risk facing enterprises, although the existence of non-intentional infringement is not excluded, but it is mainly active intentional patent infringement. However, whether it is intentional infringement or unintentional infringement, this leads to the frequent occurrence of patent infringement disputes.

Second, research and development results are difficult to establish in the form of intellectual property. First, the low conversion rate of research and development results is a common problem in domestic enterprises, and the specific conversion rate is difficult to accurately count.<sup>[5]</sup> Second, even if the research and development results can be successfully transformed, there is still the problem of improper or unprotected protection of innovation results, which refers to the failure to take legal measures to protect the intellectual property rights of innovation results, or the failure to properly protect innovation results due to the failure to choose appropriate protection methods. As mentioned above, because a large number of enterprises have no awareness of intellectual property protection, after developing products with technical value, the first thing they think of is to rush to seize the market, and do not do a proper intellectual property protection, resulting in a large number of products imitated. Finally, technical secrets are easy to leak. Technical secrets belong to the category of trade secrets, the infringement risk of technical secrets disclosure is concealed, it is difficult to prove, the protection boundary is fuzzy, and the success rate is low. Research shows that most of the business technology secrets leakage of enterprises are related to the resigned employees inside the enterprise, who have the relevant technical secrets and can directly apply the technical secrets to new jobs after job-hopping without being known by the original enterprise. In addition, in the daily operation of enterprises, there are also phenomena such as inadequate preservation and

archiving of R & D records and lack of evidence, resulting in the risk of technical secret disclosure. The thinking of the trial of technical secret infringement case still needs to be perfected.

#### **4. Analysis of the causes of difficult problems in enterprise intellectual property protection**

##### **4.1. Legislative and judicial procedures for intellectual property protection are imperfect**

Due to the relatively late establishment of China's intellectual property system, laws and regulations and various rights confirmation, identification, anti-infringement systems are very imperfect, the current intellectual property legislation is scattered and disorderly, and there are gaps in some issues when adjusting the legal relationship of intellectual property, and there will be duplication in other problem.<sup>[6]</sup> Especially when it is difficult to confirm both the actual loss of the infringed and the illegal profit of the infringer. There are great difficulties in judicial procedure. Due to the lack of awareness of intellectual property protection in our country, the lack of corresponding laws and regulations, and the enforcement of the relevant departments in the process of law enforcement is not enough, the phenomenon of intellectual property infringement is very serious. A variety of digital technologies based on big data, big model algorithms and artificial intelligence have developed rapidly, leading to a relatively passive protection of intellectual property rights in the data economy. In the specific implementation process, the types of intellectual property rights in the digital economy generated by information technology are complex, and the policies and regulations issued from the macro level will produce a one-size-fits-all phenomenon for the protection of intellectual property rights in the digital economy, which is not conducive to the sustainable development of the digital economy. At the same time, there are many administrative departments related to intellectual property rights, but under the segmented management system, there is a lack of effective communication channels and coordination mechanisms, and there is no connection between policies and management, which cannot be unified, resulting in the final implementation of relevant policies.

##### **4.2. The cost of infringement is low and the cost of protection is high**

The cost of intellectual property infringement mainly comes from the cost of obtaining intellectual property information, the cost of production and operation, and the cost of breaking the law.<sup>[7]</sup> In terms of the cost of acquiring intellectual property rights, most types of information protected by intellectual property rights are public, and infringer can easily access and exploit that information. From the perspective of production and operation costs, the infringer can directly use the intellectual property rights of others, and save its own research and development costs by directly obtaining information such as research and development costs, promotion costs, and raw material costs. Because the causality of intellectual property infringement is quite complicated, the final compensation amount cannot be consistent with the actual loss of the right holder. The cost of safeguarding rights includes the cost of discovering the infringement, the cost of identifying and stopping the infringement and so on. Because the infringement of intellectual property rights has the characteristics of concealment and uncertainty, right holders need to pay more investigation and evidence collection costs and legal service costs when safeguarding their rights.

##### **4.3. Many infringements of intellectual property rights are hidden**

In the face of intellectual property infringement, most enterprises have to face the difficult problem is that it is difficult to prove, the protection boundary is vague, and the success rate is low. Compared with other property, the infringement of intellectual property rights has the

characteristics of concealment, uncertainty and complexity, and it is extremely difficult to find and identify the infringement. Even if the infringement is eventually awarded damages, the amount of damages may be far less than the amount of profits from the infringement. Even if the infringement is eventually awarded damages, the amount of damages may be far less than the amount of profits from the infringement.

#### **4.4. The management cost of intellectual property in digital economy is high**

In the context of the rapid development of information technology, the data carried by cyberspace has gradually become complicated and diversified, and the digital economy is a speed economy. Modern information networks can transmit information at the speed of light, and the digital economy collects, processes, and applies information at near-real-time speeds at a much faster pace. In recent years, the number of domestic patent grants has been increasing, far exceeding that of the United States, especially in the field of digital economy. The increase in the number of patents granted will increase the cost of intellectual property protection in the digital economy and increase the economic consumption in the process of intellectual property protection in the digital economy. Affected by the reasons of patent audit, domestic intellectual property rights have grown rapidly in quantity, but the quality is far lower than that of developed countries in Europe and the United States. In addition, the authorization of intellectual property rights in the digital economy is not strict, and many authorized intellectual property rights in the digital economy have not played a substantial role in social and economic development, increasing the cost of protection of intellectual property rights in the digital economy.

#### **5. Conclusion**

When the value of innovation enters the vision of legal protection, it means that enterprises should balance and coordinate the relationship between innovation ability and innovation motivation, innovation behavior and innovation result, individual innovation and overall innovation. Enterprises should create a good intellectual property incentive environment and mechanism, which will play a positive role in attracting more talents and improving the appearance and design level of products. On the other hand, enterprises should strengthen intellectual property training. Let enterprise managers be familiar with laws and regulations, familiar with national management standards, and encourage intellectual property researchers to provide point-to-point guidance to enterprises. In addition, enterprises can give full play to the coordinating role of the intellectual property department in accordance with their actual situation,<sup>[8]</sup> and ultimately reflect the enforcement ability of intellectual property professionals to improve the ability to respond to intellectual property disputes. On the other hand, it is also necessary to cultivate a group of high-quality intellectual property professionals. In the course construction of intellectual property specialty, both theoretical education and practical teaching should be taken into account. In the aspect of theoretical education, it is necessary to deepen the explanation of intellectual property laws and regulations, theories and application skills; In practical teaching, it is necessary to increase the simulation debate and other practical operation links, so that students can learn and hone in practice. At the same time, strengthen industry internship and practical opportunities: establish and improve the school-enterprise cooperation mechanism, through internship, project cooperation, vocational training and other ways, so that students can personally participate in real intellectual property work, deepen the understanding and application of professional knowledge. We should give full play to the role of various intellectual property training bases. Strengthen the training of domestic and international intellectual property personnel, and cultivate a group of professional personnel proficient in intellectual property.<sup>[9]</sup> This conforms to both the practical requirements of

intellectual property protection in the digital era and the requirements of the modern construction of the rule of law.

The last thing to emphasize is to strengthen cooperation and build a pattern of protection work. On the one hand, with the wide application of the new generation of information technology, the iterative upgrading of consumer products has accelerated, and the market demand for rapid patent authorization has become increasingly strong, and it is necessary to steadily promote the quality and efficiency of intellectual property examination. At the same time, in the process of increasing the number of intellectual property rights in the digital economy, it is also necessary to improve the review and evaluation standards and strengthen the review of intellectual property rights in the digital economy. On the other hand, in administrative law enforcement, special actions such as intellectual property law enforcement have been organized to further strengthen governance in key areas, key commodities and key markets, actively exert the deterrent power of administrative law enforcement, effectively protect the legitimate rights and interests of right holders and consumers, maintain market economic order, and create a good business environment. In particular, in order to solve the problem of difficulty in obtaining evidence and determining evidence in judicial procedures, the relevant judicial organs should deeply study various guiding cases, understand the spirit of judgment, and strive to create high-quality intellectual property products and constantly improve the gold content of intellectual property rights.

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