

# Intellectual property challenges in the digital era under China's economic and trade legal system

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**Abstract:** This article delves into the intellectual property challenges and strategies that China faces in the digital age. Firstly, it introduces the fundamental concept of intellectual property and subsequently analyzes the challenges brought about by digitization, including rapid information dissemination, replication and distribution of digital products, as well as increasing instances of online infringement. This article extensively discusses the role of economic and trade laws, primarily focusing on the “Foreign Trade Law of the People’s Republic of China,” in protecting intellectual property rights. Furthermore, it examines international cases concerning intellectual property protection. Lastly, this article scrutinizes how both Chinese government and enterprises are addressing these challenges.

**Keywords:** foreign trade law; digital era; intellectual property rights

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## 1. Introduction

### 1.1 Research background and significance

With the advent of the global digital era, the rapid development and wide application of digital technology have had a profound impact on global trade. The characteristics of the digital era include the rapid dissemination of information, unlimited reproduction of digital content and cross-border circulation of digital products, which have brought new challenges to intellectual property protection. Intellectual property is an important protection for innovation and creativity, which is of great significance for promoting economic development and international trade. Therefore, it is of great significance to study the challenges of IPR in the digital era under the Foreign Trade Law for formulating effective policy and legal protection measures.

### 1.2 Purpose and methods of the study

The purpose of this paper is to analyze the challenges of intellectual property protection in the digital era under the framework of the Foreign Trade Law, and to propose corresponding solutions. The specific research methods include literature review, case analysis and comparative study. Through the analysis of relevant legal documents, international agreements and practical cases, this paper discusses the current situation and problems of intellectual property protection in the digital era, and puts forward corresponding policy suggestions and solutions.

## 2. Intellectual Property challenges in the digital era

### 2.1 Overview of intellectual property

Intellectual property refers to the exclusive rights granted by law to intellectual innovation and creative results. It mainly includes the following types: copyright, trademark rights, patent rights, and trade secrets. Copyright protects original works of literature, art and science; Trademark rights protect marks used to distinguish the source of a good or service; Patent rights protect new and creative technical inventions. While trade secrets protect undisclosed information that can bring economic benefits and is subject to confidentiality measures.

### 2.2 Challenges to intellectual property in the digital era

The digital era has greatly changed the environment of intellectual property.

The rapid spread of information, the easy reproduction and distribution of digital products, and the increase in online infringements have all posed new challenges to IPR protection. For example, digital technology enables music, movies, books and other content to spread

rapidly on the Internet, which is often accompanied by unauthorized copying and distribution, leading to frequent copyright infringement. These changes have brought multiple challenges to intellectual property protection. First, it has become more difficult to detect and hold accountable infringers. Because of the anonymity and transnational nature of the Internet, it has become more difficult to track down infringers and hold them accountable. Second, legal systems often fail to keep pace with the pace of technological development. Existing intellectual property laws may not be able to deal effectively with new forms of infringement, such as online piracy, misuse of digital technology, etc. How to protect intellectual property rights and prevent infringement in the digital era is a major challenge.

The rapid development and wide application of digital technology have brought new challenges to intellectual property protection. Digital technology makes it easier and faster to copy and spread intellectual property rights, thus increasing the risk of intellectual property rights being infringed and stolen. For example, unlimited copying of digital content has made piracy and infringement more common and difficult to track, creating difficulties for copyright and trademark protection.

### **3. Overview of the development of IPR protection in China's economic and trade legal system**

China has made remarkable progress in IPR protection. The Chinese government has formulated a series of laws and policies to protect intellectual property rights, such as Patent Law, Trademark Law, Copyright Law and so on. In addition, China has also taken an active part in international cooperation on IPR protection, such as joining the World Intellectual Property Organization (WIPO).

#### **3.1 IPR challenges and reasons in the digital Era**

Despite its progress in IPR protection, China still faces some challenges in the digital age. For example, online piracy and illegal downloading still exist. In addition, due to the rapid development of technology, new forms of infringement are constantly emerging, such as deepfake.

In the digital age, soon after a film or a piece of music is released or released, it may be illegally copied and distributed for free on the Internet. This kind of behavior seriously infringes the rights and interests of copyright owners and makes them suffer losses of economic interests. This case reveals two important issues. Digital technology has made it easier to infringe. Because digital content can spread quickly across the Internet, infringers can distribute illegally copied content to a large number of users in a short period of time. This poses new challenges to the protection of intellectual property rights. Existing laws face challenges in dealing with this new type of infringement. Although laws such as the Copyright Law and the Foreign Trade Law have regulated infringements, in practice, it is often very difficult to track down infringers and hold them accountable due to the anonymous and transnational nature of the Internet.

#### **3.2 Application of Foreign Trade Law in IPR protection**

The Foreign Trade Law plays an important role in IPR protection. For example, Article 28 stipulates that the state shall protect intellectual property rights related to foreign trade in accordance with the laws and administrative regulations on intellectual property rights. This provision provides a legal basis for IPR protection.

The Foreign Trade Law is the basic law of China's foreign trade, which covers many contents related to intellectual property protection. For example, Article 28 stipulates that the state shall, in accordance with relevant laws and administrative regulations on intellectual property rights, protect intellectual property rights related to foreign trade. This stipulation clarifies the Chinese government's firm position on IPR protection and provides a legal basis for IPR protection. In practice, the Foreign Trade Law protects intellectual property rights in a variety of ways. It prevents infringing products from entering the Chinese market by banning imported goods that violate intellectual property rights. For IPR infringement, the Foreign Trade Law provides a series of punishment measures, including fines, import bans and so on, to effectively curb infringement. Through these measures, the Foreign Trade Law has played an important role in IPR protection.

## **4.Cases and discussions on international intellectual property protection**

### **4.1 Characteristics and evaluation of DMCA Act in the United States**

The United States has adopted the Digital Millennium Copyright Act (DMCA) to protect the intellectual property rights of digital content. The act provides for the legal use and protection of digital rights management (DRM) technology, as well as a number of measures to limit the lawful use by users. The main characteristics of the Digital Millennium Copyright Act of the United States are embodied in the focus on the copyright, strengthening the protection of their rights and interests, and at the same time limiting the responsibility of Internet service providers (ISPs) to ensure the development and operation of the Internet.

However, the Digital Millennium Copyright Act of the United States has not solved all the problems of copyright on the Internet, and there are many aspects to be improved.

How to redefine the works on the network platform, the difference between the copyright of network works and the copyright of traditional works, the jurisdiction of Internet copyright infringement, and so on.

The US Digital Millennium Copyright Act itself brings a series of problems. In particular, whether the “prohibition on the destruction of the copyright protection system” will become a tool for copyright owners to prohibit others from conducting research on their works and achieve technological monopoly.

The US Digital Millennium Copyright Act also makes ISPs have to delete netizens’ comments or discussions on others’ works at the request of copyright owners. Does this constitute a challenge to individual freedom? The DMCA puts a straitjacket on research.

### **4.2 GDPR regulations in the European Union**

The European Union protects intellectual property rights for personal data through the General Data Protection Regulation (GDPR). The regulation provides for the legal processing and protection of personal data, as well as some restrictions on the use and transmission of data.

The GDPR is important for all businesses because of the broad scope of the regulations, but also because there are significant penalties for violations. In the case of serious violations, fines can reach 20 million euros or 4% of global turnover.

The GDPR also expands the scope of potential liability for any data breach. Previously, there was a distinction between a data “controller” that actually owned the data and a data “processor” that the controller contracted with in order to perform certain actions on that data. While the former may be liable for any loss or misuse of personal data, the latter is not. But under GDPR, both the controller and the processor will be jointly and severally liable. This means that either or both can be sued by the affected individual or fined by the regulator.

Since many businesses in the technology space are likely to be processors, this means that under GDPR these businesses will now have potential liability that they didn’t have before.

### **4.3 Discussion and Implications**

The above case analysis provides us with some inspirations and topics for discussion:

The formulation and improvement of laws and regulations is very important for IPR protection. Countries can learn from the experience of other countries and strengthen the formulation and improvement of IPR laws and regulations.

Technological protection measures can effectively protect intellectual property rights and reduce the occurrence of infringement. Countries can strengthen technology research and development and innovation, and promote the application and development of technology protection measures.

To sum up, China has strengthened its practice of IPR protection in the digital era, while there are some typical cases in the world that can be used as reference and learning objects. Through the improvement of laws and regulations, the application of technology protection measures, the strengthening of international cooperation and the promotion of public education, IPR can be effectively protected, and innova-

tion and sustainable economic development can be promoted.

## **5. Solutions to address IPR challenges in the digital era**

### **5.1 Technology protection measures**

With the continuous development of digital technology, intellectual property protection is also constantly innovating. Technology protection measures are a way to protect intellectual property through technical means. For example, digital watermarking technology can embed unique identifiers into digital content to track and identify infringements. Digital rights management systems can encrypt and license digital content to limit illegal copying and dissemination. These technological protection measures can improve the protection effect of intellectual property rights and increase the risk and cost of infringement.

### **5.2 International Cooperation and standard-setting**

IPR protection requires cooperation and coordination on a global scale. International organizations and countries can strengthen cooperation to jointly formulate and promote international standards and rules for IPR protection. For example, organizations such as the World Intellectual Property Organization (WIPO) and the World Trade Organization (WTO) can promote the formulation and implementation of international laws and policies on IPR protection through multilateral consultations and negotiations. Countries can also step up cooperation to jointly fight cross-border IPR infringements and enhance law enforcement cooperation and information sharing.

### **5.3 Social education and awareness raising**

IPR protection requires not only legal and technical means, but also the support and participation of society. Social education and awareness raising can enhance the public's attention and understanding of IPR protection. Schools, media and social organizations can carry out relevant education and publicity activities to increase public awareness and respect for intellectual property rights and reduce the occurrence of infringement. Meanwhile, IPR owners can also strengthen their awareness of publicity and rights protection and actively safeguard their rights and interests.

### **5.4 Innovative economy and new business models**

The development of innovative economy and new business models also provides new opportunities and challenges for IPR protection. The rapid development of digital technology and the popularization of the Internet have made the generation and dissemination of innovation and knowledge more convenient and rapid. New business models such as sharing economy, platform economy and digital content subscription are also emerging. In this context, the innovation economy and new business models need to be combined with intellectual property protection to protect the rights and interests of innovators and promote sustainable development and fair competition.

Innovative methods and trends in IPR protection need to be constantly explored and practiced. Governments, enterprises and individuals should actively participate in and promote innovation in IPR protection, so as to cope with IPR challenges in the digital era and promote innovation and sustainable economic development.

## **6. Conclusion**

From the basic concept and importance of intellectual property, to the challenges brought by intellectual property in the digital era, and to the role of economic and trade legal system in intellectual property protection, this paper analyzes in detail the current situation of intellectual property in China in the digital era, as well as the challenges and countermeasures. This paper finds that although China has made some progress in IPR protection, it still needs to further improve its legal system, enhance its awareness of IPR protection and strengthen international cooperation in the face of new challenges in the digital era. For future research, this paper suggests that we can further explore how to protect intellectual property rights more effectively through legal and technical means. In addition, it is also possible to study how to jointly

deal with transnational infringement through international cooperation. I believe that through continuous efforts and innovation, we can make greater progress in protecting intellectual property rights, stimulating innovation and promoting economic development.

## References

- [1] ZENG S M. Growth trend and suggestions of intellectual property transactions in foreign trade [J]. *Macroeconomic Management*,2023(04):64-71. (in Chinese with English abstract)
- [2] Zhang Y Y, He W W. International protection of intellectual property rights in China's foreign trade field [J]. *North China Economic and Trade*,2022(03):80-82.
- [3] LIU S F. The impact of intellectual property protection on the high quality development of China's foreign trade [D]. Zhongnan University of Economics and Law, (2021)
- [4] Ye Q F, Yang B Q & Yao, L. [4] Research on issues and countermeasures of intellectual property protection in China's foreign trade [J]. *Shanxi Agricultural Economics*,2020(19):54-55.
- [5] WANG J P. On Intellectual property protection in the field of foreign trade and its countermeasures [J]. *Rural Economy and Science and Technology*,2020,31(06):384-385.
- [6] Tang Tang. Analysis of Intellectual property frictions and Countermeasures in China's Foreign trade [J]. *Chinese Business Theory*,2020(06):75-76
- [7] Ma N. Deficiencies and Improvements of China's Safe Haven rules: Comparative analysis of notice-removal mechanism based on DMCA [J]. *Intellectual Property Rights*,2014,No.162(08):53-58.
- [8] Tian X P. The Extra-territorial effect of EU GDPR: jurisdictional basis, implementation path, institutional effect and enlightenment [J]. *Journal of International Economic Law*,2023,No.78(01):20-36.