

Challenges and Opportunities: Intellectual Property Protection on the Background of Digital Technology

Ke Zhang

School of Law and Politics, Guangdong Ocean University, Zhanjiang, 524088, China.

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Abstract: The rapid development of digital technology brings unprecedented challenges to intellectual property protection. It is necessary to pay great attention to the characteristics of intellectual property under the background of digital technology. As a result, legislation, law enforcement, justice, public service and technical guarantee of intellectual property protection should be reinforced.

1. Introduction

With the penetration of artificial intelligence, big data, cloud computing, block-chain, virtual technology, Five G and other technologies into e-commerce, public affairs management and people's daily life, the development of the Internet is undergoing a transformation revolution from information technology (IT) to digital technology (DT) era. The protection of intellectual property in the era of digital technology also presents distinct characteristics. As for the rapid development of digital technology, it is necessary to make full use of its advantages to fight against new type of intellectual property infringement. Innovative intellectual achievements can serve the society better and promote benefits as well as create a good atmosphere to encourage innovation. A country's new response to new economic and technological challenges will provide alternative paths for the formation and development of future international rules. Whoever takes the lead in making institutional and rule changes that meet the needs and rules of innovation will likely lead the international trend. [1]

2. Overview of Intellectual Property on the Background of DT

2.1. Quicker Development of DT, Stronger Penetration

As one of the greatest inventions of the 20th century, the Internet has brought great changes to people's production and life. China has had full access to the Internet for 25 years. By the end of 2018, China had 829 million Internet users, with an Internet penetration rate of 59.6 percent and 98.6 percent of Internet users accessing the Internet through mobile phones. The development of the Internet has provided a broad platform for the application of big data, cloud computing, artificial intelligence and other technologies. The combination of the Internet with these technologies has pushed the development of information technology into a new stage. Nowadays, the rapid development of information technology has exerted a profound influence on economy, politics, culture, society, military and other fields. Information technology has penetrated into all fields of

social life, and information service is profoundly affecting people's way of life and promoting the formation of digital life.[2]

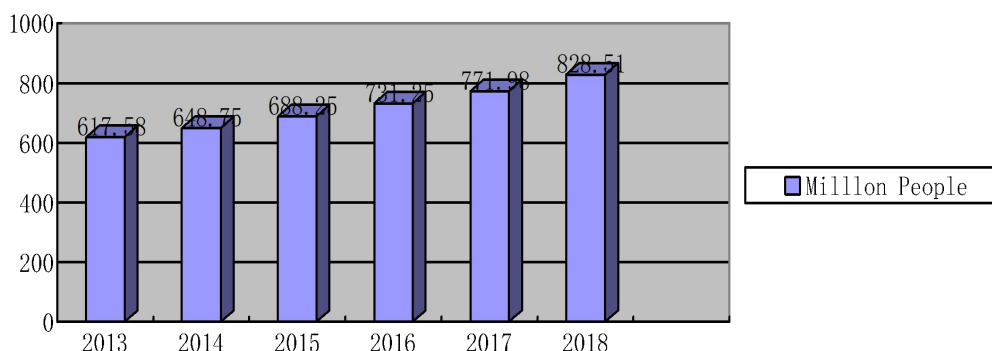


Figure 1: Netizen scale in China.

Source: China Internet Network Information Center.

2.2. Intellectual Property Disputes are on the Rise

Under the network environment, intellectual property infringement behavior has also appeared to be prone to occur and multiple occurrences. In 2018, the number of first-instance intellectual property rights civil cases received by the local people's courts nationwide was about 243,400, an increase of 40.97% over the same period of last year. In 2018, China's intellectual property litigation cases were mainly in the telecommunications, media entertainment and high-tech enterprises industry. Among them, the entertainment industry cases mainly focused on copyright disputes, and patent cases were mainly concentrated in high-tech and medical and biotechnology fields. It is worth noting that the high-tech content of traditional gold-absorbing industries such as financial banks has gradually increased, and intellectual property cases have a growing trend. [3]

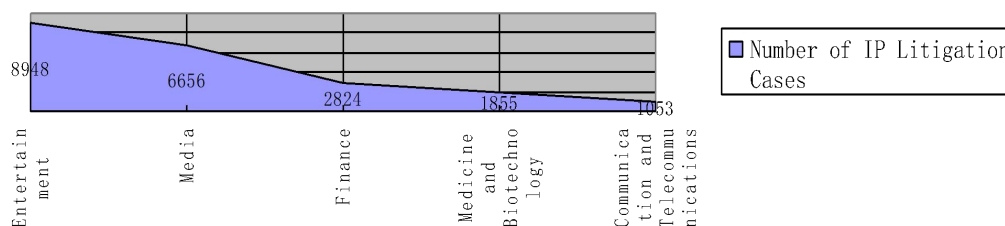


Figure 2: Cause of intellectual property cases of China in 2018.

3. Challenges of Intellectual Property in the Background of DT

3.1. The Infringement of Intellectual Property Rights is Complex and Changeable

Network intellectual property infringement often involves a tight, long-term, hidden, anti-counterfeiting industry chain. In recent years, the characteristics of the infringers against the rights and enforcement actions through the fragmentation and fragmentation of the fake and fake work are very obvious. The intellectual property infringement of some hot-selling products also presents the distinctive features of joint fake and fake sales across industries, regions and

cross-network platforms, which greatly increase the difficulty of using traditional means to crack down on Internet intellectual property infringement.

3.2. Infringement of Internet Intellectual Property Rights Involves Multiple Legislations

The field of intellectual property protection of the Internet has broken through the traditional civil law, tort liability law, patent law, trademark law, advertising law, anti-unfair competition law, copyright law and other fields, showing the characteristics of multiple complex legal relationships. For example, disputes over trademark infringement on the Internet may involve multiple trademarks such as similar trademark discrimination, well-known trademark identification, commercial mark rights conflict, false advertising, and unfair competition. It is difficult to make infringement by relying solely on intellectual property rights. No conclusion. The legal norms of network infringement of intellectual property rights are imperfect, and there are still a lot of gaps in some aspects. There is no uniform referee standard for the electronic evidence certification standard, the principle of the distribution of burden of proof, the electronic evidence review and the specific amount of compensation, which leads to the inability of many infringement cases in practice to be handled.

3.3. Difficulties in Collecting, Fixing and Maintaining Infringement Evidence

Evidence is the core element of the field of law in determining facts, assigning responsibilities, and determining the basis for compensation. With the multi-modal development of network technology and the full network of Internet elements, the evidence of Internet intellectual property infringement has been hidden, transferred, modified and deleted as a means of defending rights and law enforcement used by infringers. It is difficult to deal with the confrontation of infringing entities with well-conceived and well-defined labors by traditional evidence collection and fixation methods, thus greatly affecting the normal operation of intellectual property rights holders and Internet platforms. At the same time, the infringement of Internet intellectual property rights has also shifted and spread from the registered platform field to social software. It is difficult for people who infringe on Internet intellectual property rights to eliminate illegal evidence in social software to be discovered and investigated.

3.4. The Amount of Infringement is Huge and the Cost of Safeguarding is High

The identification of Internet intellectual property rights and the evidence of infringement both need to be identified by the combination of online and offline material clues. The characteristics of the combination of multiple legal relationships in Internet intellectual property also determine the need for a large number of subjective arguments, inferences, and analysis for the determination, identification, and refutation of intellectual property rights. " Provisions of the Supreme People's Court on Several Issues Concerning the Trial of Cases by Internet Courts " was promulgated by the Supreme People's Court on September 6th, 2018, which stipulated that Internet courts have jurisdiction over online shopping contracts that are "signed or fulfilled through the Internet platform" but do not include the Internet infringement cases. At present, China has established a special intellectual property court to conduct special and professional jurisdiction over intellectual property cases. However, there is no relatively independent and specific rule of evidence application for intellectual property cases. In the process of administrative law enforcement and judicial ruling, the identification of Internet intellectual property infringement requires law enforcement officials and judicial ruling personnel to use discretion in a large amount.

4. Opportunities for IP Protection on the Background of DT

4.1. The Protection of Intellectual Property Right Has Been Emphasized Clearly

The Evaluation Report on China's Intellectual Property Development in 2018 which was compiled by the Intellectual Property Development Research Center of the State Intellectual Property Office of the People's Republic of China showed that China's comprehensive intellectual property development index rose from the 13th to the 8th place among 40 major countries, greatly improving the level of development.[4]

4.2. Make Good Use of DT to Protect Online Intellectual Property Rights

In August 2018, promulgated the "Internet +" Intellectual Property Protection Work Plan (hereinafter referred to as the "Work Plan") was promulgated by the National Intellectual Property Administration. The "Working Plan" pointed out that it is necessary to build an intelligent detection system for infringement and counterfeiting clues and a comprehensive intelligent detection system to realize on-line identification, real-time monitoring and source traceability of infringement and counterfeit clues. At the same time, it is necessary to classify the online identification model of counterfeit patents, design patent infringement, trademark infringement, invention and utility model patent infringement clues, and connect with the basic database to realize online identification of infringement and counterfeit clues. Through big data analysis, determine the list of infringing and counterfeiting high-risk products and enterprises, establish a list of intellectual property rights that are vulnerable to infringement and counterfeiting, implement active correlation monitoring on the directory, and promote the establishment of a new on-line commodity infringement and counterfeit risk monitoring platform to synergistically achieve infringement clues.

4.3. Targeted Strikes Against Special Law Enforcement

During 2018, China had handled 77,000 patent administrative cases which is up to 15.9 percent comparing to the last year. 43,000 cases of patent counterfeiting were investigated and dealt with, up to 10.9 percent comparing to the last year. In 2018, the total imports and exports of intellectual property royalties exceeded us \$35 billion. Total financing of patent and trademark pledge reached 122.4 billion Yuan.[5] the office of the state intellectual property office printed and issued the 2019 special action plan for law enforcement and protection of the national intellectual property system (hereinafter referred to as the action plan), instructing local intellectual property offices (intellectual property administrative departments) to actively carry out special actions and intensify the fight against infringement and counterfeiting. "Action plan" clearly defined the rural counterfeit and shoddy food management, exhibition intellectual property law enforcement protection, e-commerce intellectual property law enforcement protection, private enterprises intellectual property rights protection, foreign-related trademark patent infringement cases and other five major annual work priorities.

4.4. Improvement of Legislation

The development of economy and science and technology, especially information and communication technology, has changed the innovation environment and development mechanism, which needs new intellectual property law system to cope with fake goods have always been the "original sin" of e-commerce platforms. In the past, e-commerce platforms would evade their due censorship responsibilities with the principle of "safe harbor", which directly or indirectly emboldens

the sellers of fake goods. In 2018, the e-commerce law of the People's Republic of China was promulgated, emphasizing the protection of intellectual property rights and specifying the rights of ip owners to "notify -- delete" and the obligations of platforms to "delete -- publicize". Focusing on encouraging innovation and competition, as well as taking into account the needs of regulation and management, e-commerce law will play a positive role in fighting against fake goods and preventing malicious complaints, laying a foundation for the future development of e-commerce. In April 2019, the trademark law of the People's Republic of China was amended to provide more scientific and detailed regulations on the use of website trademarks.

4.5. Judicial Activism

On January 1st, 2019, the intellectual property court of the supreme people's court was formally established and began to receive cases. In 2017, Hangzhou Internet court created the first electronic evidence platform, and used block-chain technology as the access mode of electronic evidence for the first time in China, realizing the whole process record, full link credibility and full node witness of electronic data. In the current Internet court for litigation elements of electronic commerce contract dispute trial set up the entire online using innovation, network evidence rules, on the basis of any intellectual property rights courts to selectively absorb its reasonable parts, and take the correspondence to intellectual property litigation evidence rules, e-commerce innovation intellectual property infringement evidence rule of the new system. At the same time, the evidence rules of e-commerce intellectual property rights should be determined by actively absorbing the effective experience of e-commerce platforms and the opinions and Suggestions of self-regulatory organizations.

4.6. The Enterprise's Spontaneous and Independent Mechanism for Safeguarding Rights

Alibaba Group actively explores the path of intellectual property rights protection, and gradually establishes a relatively complete and updated management mechanism, which strictly checks all links of the chain, which is conducive to preventing fake commodities from entering the e-commerce platform at the source.[6] From set up the mailbox to accept complaints of intellectual property, set up the mechanism of online fraud, active prevention and control system development, to the online linkage anti-counterfeiting, to participate in social work, the formation of "digital technology can assign + multivariate power-sharing between economic governance system, systemization, ecology through Alibaba intellectual property protection system, approval and intellectual property rights protection all link to upgrade.

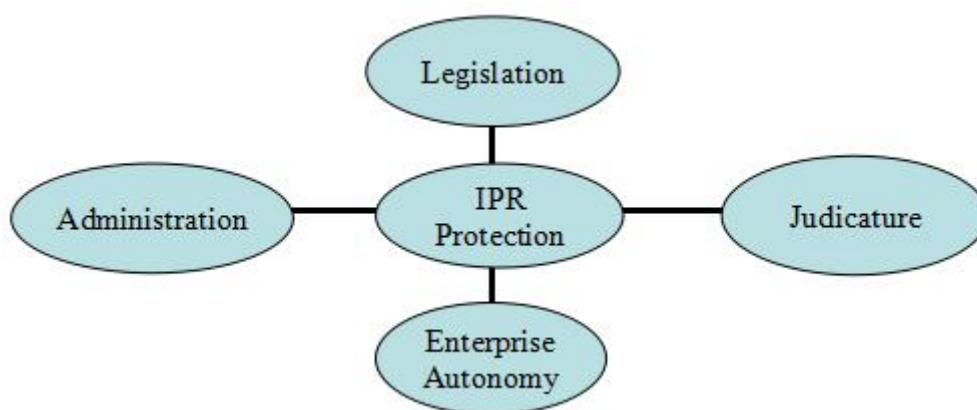


Figure 3: The cooperation of intellectual property right (IPR) protection.

5. Summary

The rapid development of DT technology has brought enormous challenges to the protection of intellectual property while also presenting new opportunities. In the future development, the legislative, law enforcement, judicial, corporate, public and other groups should fully cooperate and make full use of the advantages of DT technology to protect and improve the intellectual property rights in the network era.

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