

Exploration of the Challenges Facing Intellectual Property Protection in the Age of Digital Economy and Solution Measures Analysis

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ABSTRACT

In the background of the Internet economy, a new type of intellectual property, namely, network intellectual property, has been born. It is based on the traditional intellectual property rights such as copyright and industrial property, and broadens the intellectual property rights in the network environment to include areas such as databases, multimedia, electronic copyrights and computer software. This not only greatly enriches the scope of intellectual property rights, but also intensifies the risk of intellectual property infringement. In the context of the network economy, intellectual property protection faces new challenges and requirements. It has also attracted great attention from countries and international intellectual property organisations. They have conducted in-depth studies on the problems faced by intellectual property rights in the era of network economy and actively sought effective solutions to establish a complete and systematic intellectual property rights protection system to alleviate the pressure on intellectual property rights protection brought about by the complexity of the situation. In the context of network economy, IP protection faces new challenges and requirements. This has also attracted great attention from national and international IP organisations. They have conducted in-depth studies on the problems faced by IP in the era of network economy and actively sought effective solutions to establish a complete and systematic IP protection system to alleviate the pressure of IP protection brought about by complex situations.

1. Introduction

The leading force for social advancement lies in reform and innovation, and the core mode of operation of the modern scientific and technological revolution is embodied in the research and development and construction of intellectual property rights, while the main mode of transaction of the modern market economy is embodied in the trading and exchange of intellectual property rights in the context of globalisation. At the heart of the IP system is the exclusive right of the creator, which has had a significant impact on the knowledge economy, driving the geometric progression of the knowledge widespread dissemination and growth. It has

also incentivised competitors to go beyond existing technologies to develop new fields at a higher level, and promoted the transformation of advanced technological achievements, thereby contributing to the development of social productivity. Therefore, the innovativeness of science and technology plays a decisive role in its progress, and this role is reflected in the fierce competition for IP development strategies in the context of the knowledge economy.

2. Overview of intellectual property rights on the Internet

Internet intellectual property (IP) is the results and

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rights and interests in various fields based on the constantly updated and applied Internet, which are created by the enterprises and individuals on the network platform through their own wisdom under the limitations of relevant laws and regulations. Specifically, it can be understood from three aspects:

2.1 Internet property rights

This right and interest is virtual and includes a series of virtual commodities developed based on Internet technology, such as equipment, currencies and props related to online games. In fact, these products belong to a kind of service, and they are acquired by the Internet operator together with the organisation responsible for producing and researching the online game, so both teams own the corresponding rights and interests.

2.2 E-book property rights

The rights and interests of the subject who transforms the traditional IP through the Internet platform, and the most typical example is the copyright of the author who creates the e-book.

2.3 Other copyrights involving the Internet

Creators use part or all of the Internet technology when making and innovating products and works. These products or works, such as software, are not physical entities, and they need to rely on the Internet to survive. Thus, creators' IP is also built on the proper functioning of the Internet. In fact, the coverage of Internet IP is extremely broad, including not only all kinds of physical and virtual information, products, works as well as services in the real world and on network platforms. The Internet is not only an environment, but also a technology and platform, etc.^[1] Therefore, with the continuous development of the Internet, the related IP content will become richer and more complex.

3. The Positive Implications of Intellectual Property Protection on the Internet

To create a legal environment for fair competition and to improve China's innovative power. In general, the maintenance of network IP is quite challenging, this is due to the complexity of network information, a little bit of small things may cause the whole situation to change, so the relevant laws and regulations are difficult to clarify, and even so far have not been formally implemented. At present, the problems of sharing information posted by others privately without their permission or even stealing their technology, which exist on the Internet, have still not been effectively solved. These difficulties will not only

bring corresponding harm to individuals and the country, but also have a far-reaching impact on the country's innovation ability. The wide openness and freedom of the Internet has led to the breeding and proliferation of problems such as piracy and plagiarism, and has made it less expensive to deal with. Especially when faced with high costs but not fully realised results, the cost of infringing intellectual property rights and imposing penalties becomes negligible, which will seriously dampen the creators' spirit and enthusiasm for innovation. Therefore, strengthening the protection of intellectual property rights on the Internet and cracking down on the infringement of others' intellectual property rights through authoritative legal means is a necessary condition for building a fair and healthy competitive environment on the Internet, as well as a necessary way to motivate enterprises and individuals to make sustained efforts and actively innovate. Promote the normative development of Internet operation and industry. Due to the defects of network services, it provides a good platform for IP violators. Therefore, enhancing the protection of network IP must rely on the optimisation and standardisation of network services, which will positively contribute to the overall progress of the network industry. First of all, strengthening the protection of network IP means that we need to regulate the Internet in all aspects at all levels, including legislation, judiciary and law enforcement, so that there are clear rules and legal bases for website operation operations, and that the development of website operations and the Internet industry can be restricted to a legal scope, thus reducing the incidence of IP infringement. From another perspective, analysing the negative incidents that have occurred on the Internet, including intellectual property infringement, can help us understand some of the specific problems that may arise in Internet operations. This helps website operators and Internet development entities to solve problems as early as possible according to relevant technical specifications and legal regulations, to improve the level of network operation and to promote the standardised development of the Internet industry.

4. Current Problems in Intellectual Property Protection

In the stage of planned economy, China did not establish the system of IP. However, with the advancement of reform and opening up, in order to meet the needs of economic growth, China gradually learnt and introduced IP management institutions and legal systems from abroad, which enabled China to make obvious progress in the management and protection of IP. However, since China's IP system was only just established in the early 1980s,

it still need to further improve the relevant system and management system. The penalties for IP violations were not strong enough. The problem of IP violation occurred frequently in the society. This was mainly because, due to the relatively low compensation standard set up by the legal system of IP, it was impossible to punish it effectively. Due to territorial protectionism, the enforcement was not sufficient in all territories, leading to a simpler problem. The courts at the bottom were unable to deal with patent-related cases due to the IP's regulatory authority and the state of the economy. At the same time, because IP regulations were not robust, there were some protections in the enforcement process that were contrary to our national environment, which had not been adopted by our domestic companies.

5. Lacking Anti-monopoly Measures to Maintain Fair Competition in IP

The purpose of the IP system is to safeguard the specific rights and interests of IP holders, to authorise and disclose their technology in order to promote the execution of technological achievements and further innovations. The protection system of IP is a two-way street; on the one hand, appropriate protection can benefit IP owners, and on the other hand, over-protection may lead to technological monopoly^[2]. However, China's patent legal system has not yet formulated an anti-monopoly patent law, and there are no anti-monopoly restriction clauses implemented in the relevant legal system. In the face of global companies or large consortiums of enterprises using IP to control the global market, China has not taken the appropriate legal means to protect the development of domestic enterprises and the rights and interests of consumers.

6. Lacking Coordination and Early Warning Mechanisms in IP Organisations

The management and protection of IP involves all areas of the economy and society, including innovation, maintenance and use. However, due to human resource constraints, there is insufficient communication between IP management and enterprises, resulting in asymmetric information. From one perspective, companies are often at their wits' end when they suffer from trade mark infringement or technical difficulties. In another perspective, due to the shortage of human resources in IP management organisations, it is difficult for them to have a comprehensive grasp of the company's specific situation, which is unfavourable to the mediation and disposal of the corresponding matters. The failure of enterprises to pay enough attention to and take effective ways to deal with some

international IP disputes has led to time delays or mishandling, which in turn has brought losses to enterprises. The lack of national funds for patent protection has led to a serious shortage of talents for IP application. Often, local IP management organisations face a shortage of manpower, funds and equipment due to restrictions imposed by national regulations. As financial management adopts two lines of income and two lines of expenditure, patent application and examination fees need to be submitted to the central government. In practice, the funds for administrative patent enforcement, which the IPO is responsible for administering, are borne by local finances. Local finances are constrained by the fact that central revenues and local expenditures are not at the same level. As a result, local governments regard IP departments as general administrative organisations and provide only the necessary administrative funds, unable to guarantee the expenditure of specialised costs for administrative enforcement. Although some localities have paid sufficient attention to IP protection and implemented short-term ad hoc measures, such as regularly allocating a portion of funds for patent administrative enforcement, this has not built a systematic mechanism.

7. Exploration of the Analysis of the Solution Measures for the Protection of Intellectual Property Rights in the Era of Digital Economy

With regard to the infringement of intellectual property rights on the Internet, the Government of China has attached great importance to the issue and formulated a series of laws and regulations to safeguard intellectual property rights on the Internet, and has already achieved some effectiveness. For example, on the basis of the Copyright Law of the People's Republic of China in 2001, the Measures for the Administrative Protection of Copyright on the Internet in 2005, and the Regulations on the Protection of the Right to Information Network Dissemination in 2006, the Tort Liability Section of the Civil Code has also provided the latest answers to IP-related issues. The establishment and implementation of all these laws and regulations have, to a certain extent, exerted their corresponding influence. At present, China still needs to actively promote the relevant legislative work in the legislative field, and is committed to constructing a comprehensive Internet intellectual property protection system, as well as formulating and improving the relevant legal system. First and foremost, the legislative department needs to exhaustively stipulate the relevant penalty rules for IP infringement in the network environment, clarify the categories of infringement, and effectively distinguish infringement behaviours according to the current judicial practice, so as to

increase the amount of punitive damages. Next, the legislature needs to learn from foreign legislation and continue to improve the international copyright protection, the use of copyright arising from the downloading and viewing of copyrighted works, and the reproduction rights arising from the digitisation of works, etc., and make clear delineation of the relevant categories. Provide a path for the enforcement of the law. In the end, the staff in the legislative department need to actively refresh their IP legislative thinking to ensure that the legislative task of IP can be smoothly promoted and the current regulations adjusted according to the new changes in the Internet environment. In order to deal with the differences between the actual judicial operation and the situation in our country, or the more difficult problems encountered in the judicial operation, we need to modify the relevant laws and regulations, and we also need to interpret these principles with the help of the announcement of the judicial branch, so that the task of IP protection under the Internet environment can be closely integrated with the judicial operation in our country^[3].

The original database function is to store and process information, collect some information and then process it according to a certain system to ensure that it is in orders^[4]. Although databases are also essentially a class of data products, their main advantage is that they have a greater investment in research and development and a lower estimated cost. Due to its unique attributes, database infringement is common. Especially in the network environment, the transmission of information is very fast, and the release and collection of information show open qualities; however, the interaction, transmission and storage of data are global and cross-regional in nature, so the IP protection of databases has gained great attention from all parties in the society^[5]. We should attach great importance to the task of protecting databases, as it is a key resource whose easily copied qualities often give rise to corresponding infringing behaviours. However, in the process of protection, reasonable regulations should be followed. If we simply protect the database without disclosing all the information in the database, the sharing function of the database will be hindered, and the phenomenon of database exclusivity will occur. Therefore, whether the protection is carried out blindly or avoided selectively, the compliance rights and interests of data creation may suffer losses, which may have a negative effect on the normal flow of information.

The first and foremost task of strengthening the protection of network intellectual property rights and the innovation of detection technology is to enhance the ability to examine data transmission to the Internet, so as to curb

infringement at the source and take preventive measures. Next, technical support is provided for the enforcement tasks of judicial departments and network regulators, so as to effectively eliminate the infringement of network intellectual property rights, improve the enforcement capacity, shorten the time and reduce the cost of defending rights, and promote the protection of intellectual property rights. Technical means play a key role in the management of Internet data resources and the protection of IP. There are various forms of network infringement and various technological crimes, therefore, both organisations providing data services and relevant management departments should make full use of data technology to protect themselves. For example, through the use of technologies such as firewalls, anti-copying, limiting the frequency of use, digital watermarking, encryption of information, and identity authentication, we can avoid illegal access to, misappropriation of, copying of, and tampering with copyrighted works^[6].

Relying on the functions of the legal department or DOJ alone is not enough to achieve effective management of intellectual property rights; the key lies in establishing a system of universal participation and the concept of respecting and protecting intellectual property rights in all aspects from a social perspective. If the public's respect for intellectual property rights is higher, then more people in the society will be active in the protection of intellectual property rights. However, at present, China's intellectual property law-making process is relatively backward, and many members of the public are unfamiliar with it, which makes it impossible for them to seek redress through judicial channels when they encounter infringing behaviours. In addition, many producers do not pay enough attention to the protection of intellectual property rights due to the lack of relevant legal knowledge, resulting in the infringement of others' intellectual property rights in the production process. Therefore, China's government needs to increase online publicity^[7]. Through the creation of WeChat public number or official microblogging, etc., the intellectual property management department and the judicial department can regularly publicise intellectual property laws and regulations to ensure that the relevant legal knowledge is effectively disseminated. In addition, relevant agencies can use online media to publicise incidents of intellectual property infringement in the online environment, so as to achieve its preventive and educational role^[8].

8. Conclusion

In the current rapid advances in the Internet background, the creation of a standardised, effective and fair

IP protection system has become a key issue that needs to be faced in theoretical research and practical operation, IP protection system not only plays a key role in strengthening the maintenance and application of IP, but also has a profound impact on the process of China's scientific and technological innovation, industrial innovation, and cultural innovation, IP protection system plays a key role in enhancing the creation, protection and application of IP, and also has close links with China's scientific and technological development, industrial renewal and cultural development, etc. IP protection system plays a key role in enhancing the creation, protection and application of IP, and also has close links with China's scientific and technological development, industrial renewal and cultural progress. The IP protection system plays a key role not only in enhancing the creation, protection and application of IP, but also has a close connection with our country's scientific and technological development, industrial renewal, and cultural advancement and other fields. If IP cannot be properly protected from the perspective of the Internet, then it will certainly weaken the innovation enthusiasm of our public and adversely affect the development plan of our innovation path. Therefore, we need to improve the legal system of IP according to the IP infringement in the Internet environment in order to provide guidance for the conduct of judicial practice. At the same time, we also need to focus on the construction of a team of professional lawyers, enhance the effect of legal propaganda, create an excellent environment for all people to comply with the law, and promote the continuous reduction of IP infringement on the Internet.

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