

RESEARCH ON ISSUES RELATED TO COPYRIGHT INFORMATION SERVICE INTEGRATION IN NETWORK ENVIRONMENT

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Abstract: Based on the introduction to the concepts of copyright and copyright information, this paper analyses the role of copyright information service in the growth of the modern service industry, and discusses new problems of copyright protection in network environment. Then this paper points out the status as well as the gap of China's copyright information service, and purposefully proposes the measures and suggestions on enhancing copyright information service in network environment.

1 INTRODUCTION

Intellectual property is a general term for the right to be legitimately produced on the basis of the creative intellectual results and business marks. Intellectual property includes industrial property and copyright, the industrial property also includes patent right, trademark right, prohibiting unfair competition, etc., and the copyright includes the author's right and neighbouring right.

Copyright, refers a general term for the right that legitimately enjoyed by the creators of literary, artistic, scientific works and other copyright owners.

Copyright includes the following personal rights and property rights: the right of publication, that is, the right to decide whether to make a work available to the public; the right of authorship, that is, the right to claim authorship and to have the author's name mentioned in the work; the right of alteration, that is, the right to alter or authorize others to alter one's work; the right of integrity, that is, the right to protect one's work against distortion and mutilation; the right of reproduction, that is, the right to produce

one or more copies of a work by printing, photocopying, lithographing, making a sound recording or video recording, duplicating a recording, or duplicating a photographic work or any other means; the right of distribution, that is, the right to present the original or copy of a work to the public by virtue of sale or donation; the right of rental, that is, the right to authorize, with payment, others to temporarily use cinematographic works, works created by virtue of an analogous method of film production, and software, except one which is not the key subject matter of rental; the right of exhibition, that is, the right to display in public the original or copy of a painting or photographic work; the right of performance, that is, the right to perform a work and broadcast the performance of a work in public by various means; the right of showing, that is, the right to show to the public a work of art, photography, cinematography and any work created by analogous methods of film production through film projectors, overhead projectors or any other technical devices; the right of broadcast, that is, the right to publicly broadcast or communicate a work

to the public by wireless means, to communicate a broadcast work to the public by wire or relay means, and to communicate a broadcast work to the public by a loudspeaker or any other analogous tool used to transmit symbols, sounds or pictures; the right of information network communication, that is, the right to communicate a work to the public by wire or wireless means in such a way that the public may access these works from a place and at a time individually chosen by them; the right of making cinematographic work, that is, the right to fix a work on a carrier by virtue of film production or an analogous method of film production; the right of adaptation, that is, the right to adapt a work for creating a new work of originality; the right of translation, that is, the right to translate a work from a language to another; the right of compilation, that is, the right to compile works or parts of works into a new work through selection or arrangement; any other rights that shall be enjoyed by copyright owners.

Copyright information is often narrowly understood as "copyright stated information", that is a warning of work copyright, but the content of copyright information is far more than that. From view of the cultural development and intellectual results protection, the copyright information is a copyright social phenomenon, as well as an expression and a reflection of human rights activities, but also an important intermediary of people's copyright awareness and understanding, thus studying the source, access and utilization of copyright information is actually a self-improvement of the copyright laws structure and the system content. Although China has implemented the automatic protection principle of copyright, it does not prevent the copyright information resources from playing an important guidance, advice, voucher and other functions in scientific, cultural, artistic activities as well as development and utilization activities of work.

The composition of the copyright information is as follows: Copyright legal information. Copyright legal information is related to the information of copyright creation, development and change. Work content information and performance form information. Copyright trade information. It includes: trade subject information, trade object information, publishing contract information, licensing right information and the transfer information of property right subject in the copyright. Copyright utilization information. Copyright management information. Copyright management information or right management

information emerged under a large number of the network works communication and utilization. It can not only identify the oblige, but also permit users to use, look for the tort and monitor users' behaviors according to predetermined conditions. Copyright legal activity information. It includes: copyright legal system, copyright laws regulations, copyright academic research results, copyright cases, copyright statistical data, as well as the license and dispute between the copyright owners and users. Copyright activity subject information. The subject of copyright activities mainly includes copyright owners, copyright information users, copyright management institutions and copyright information service institutions. Copyright management institutions can also be divided into copyright administrative management organizations, copyright collective management organizations, copyright agencies and other levels.

The modern service industry is information-intensive and knowledge-intensive service sector, which relies on modern new technologies, new business conditions and new service forms in order to provide high value-added, high-level, knowledge-based production service and life service to the community.

Strengthening copyright information service, helps to encourage the technical innovation in service sector, and promotes to form a number of leading companies who have well-known brands in the field of copyright information service. Copyright information service is an integral and important part in the modern service industry's growth.

2 NEW PROBLEMS OF COPYRIGHT PROTECTION IN NETWORK ENVIRONMENT

In order to vigorously promote the utilization and service of copyright information, China should strengthen the copyright protection in network environment.

2.1 Legal Protection of Web Page and Database

2.1.1 Legal Protection of Web Page

Web page is essentially information composed of text, graphics, audio, animation or a combination of these above. China's copyright law does not explicitly provide for the Web page, however, from

the view of our judicial practice and academics' discussion, the legal protection of Web page is mainly divided into copyright protection and anti-unfair competition protection.

2.1.2 Legal Protection of Database

In the early 1980s, international organizations as well as developed countries in Europe and the United States had explicitly protected the database as a compilation of works. Protecting the database as a compilation of works exists unavoidable limitations, because it only protects the structure and does not protect the contents, exacerbating the copyright law's "weak" protection. There are also issues on weak protection of database copyright in China. Facing weak protection of database by copyright law, international organizations as well as developed countries in Europe and the United States give a special right to the producers of the database which is a separate legal system of copyright protection. Their fundamental purpose is to protect the database investments of producers. The European Union has the fastest growing and the greatest protection efforts in the special right protection of database.

2.2 Legal Protection of Network Communication Right

From the perspective of WIPO and the world national legislation, copyright protection of the network works has become a common trend in international development. While national legislation varies, they are fit with their national situation. Therefore, facing challenges of China's copyright law posed by the network, the approach should also be based on our own national conditions, and give the right to the copyright owner to control the works communication in the network through the adjustment of copyright law.

2.3 Legal Protection of Technical Measures

Technical measures refer to the equipment, products or methods initiated by the copyright owner. They can effectively control the digital works entered into the protection of the copyright law and effectively protect the rights of copyright owners to prevent violations of their legal rights. Currently the copyright owner can take many technical measures in network environment, such as anti-copying devices, electronic watermarks, digital

signatures or digital fingerprint technology, electronic copyright management systems, tracking systems and so on.

Establishment of legal protection for the broad technical measures has become an international trend and it has been finalized by two treaties of WIPO. The United States and European Union countries are all conformed to this trend and established their own system of protection. From the view of China's legislation status, although we began to take copyright protection for the technical measures, there is no in-depth study about a series of theoretical issues in the legal protection of technical measures, such as the basis of protection, the degree of protection and restrictive measures of technical measures and so on.

2.4 Legal Protection of Right Management Information

Right management information is identification information of work, the work author, the owner who has any rights of the work, or identification information of the terms and conditions used by the works, as well as identification number or code which represents such information. All information is annexed to each copy of the work or appears when the work is communicated to the public.

At the level of international protection, WCT and WPPT firstly protect the right management information. The relevant right management information protection content of European Union is basically consistent with the WCT. The United States has the long history of the right management information protection. China's protection of electronic right management information only lays down the provisions in principle still needs the further improvement.

3 DISTRIBUTION STATUS ANALYSIS OF DOMESTIC AND FOREIGN COPYRIGHT INFORMATION RESOURCES INTEGRATION

The construction of domestic and foreign copyright information websites lags behind obviously compared to patent information websites and trademark information websites especially the construction of patent information websites. China's construction of some comprehensive, professional copyright information websites is not satisfactory.

3.1 Introduction to Domestic and Foreign Copyright Management Institutions Websites

3.1.1 The United States Copyright Office (<http://www.copyright.gov/>)

The United States Copyright Office website publishes the relevant copyright information and offers the relevant copyright services, providing users with the copyright search services of multiple functions. The website not only offers free information but also in-depth information on charges. In addition, the website has a perfect query system which mainly provides the query interface of copyright database of the United States Copyright Office, including three databases which can provide registration information and copyright owner information system since 1978: The first is the database of books, including book, film, sound recording, map, software, media, etc.; the second are periodical, newspaper, magazine database, etc.; the third is the database of copyright owner, including the change or transfer of the copyright owner. Furthermore, the website introduces copyright law specially, such as the latest copyright law information, copyright information that is being drafted and so on. It provides plenty information links of copyright preparation of WIPO, the recent copyright treaty, provision, and other information as well.

3.1.2 National Copyright Administration of People's Republic of China (<Http://www.ncac.gov.cn/GalaxyPortal/inner/bqj/index.jsp>)

The National Copyright Administration of People's Republic of China website is the official portal site of our copyright information, of which the overall layout is rigorous and generous. The web page uses the framework for the layout, beautiful and clean. From the perspective of website function, because it is a government portal site, the on-line information of the copyright notice, copyright service, international exchange is of course essential; and different from the other copyright websites, it provides official, authoritative copyright statistics. Of course, there are many deficiencies on the National Copyright Administration website, first of all, the search function is so simple that it only simply provides web search, what's more, the site location is limited to simple information publishing, and that causes the amount of information is too

little and less available and valuable copyright information.

3.1.3 Music Copyright Society of China (<http://www.mcsc.com.cn>)

Music Copyright Society of China is the unique music copyright collective management organization in mainland China, which is sponsored and established by National Copyright Administration and Chinese Musicians Association. It is a non-profit organization which is devoted to defense the legitimate right and interest of composer, lyricist and other music copyright owner. The association has signed mutual representative agreement with sister organizations of 41 countries and regions. Lists of association membership and information of works have been imported IPI (International People of Right Data Information System) and ISWC (International Standard Musical Work Code), which will take the works of China's music copyright owners into the international identification system. Once the China's works are used overseas, their interests will be protected in time.

3.1.4 China Audio-Video Collective Management Association (<http://www.cavca.org.cn>)

China Audio-Video Collective Management Association is the only audio-visual collective management organization formally approved by the National Copyright Administration of China, implementing collective management to audio-video program copyright and relevant rights according to the law. The right types of management association include: the right of audio-visual performance, the right of showing, the right of broadcast, the right of rental, the right of information network communication, the right of reproduction and distribution, as well as other audio-video copyright and relevant rights suitable for collective management.

3.2 Website's Features Analysis of Domestic and Foreign Copyright Information Resources

3.2.1 <http://www.copyrightwebsite.com/> Website

The website mainly provides books on the copyright, as well as a large number of audio-visual information which is watched or listened to on-line,

but lacking of the law information or meeting information of the copyright. The attraction of the website is that the layout and information organization are unique and clear. There are both site navigation and site map. Information organization of the website adopts classification, and the website is accompanied by pictures in order to make the website clear, easy to understand, and attractive. However, the website focused on the service and support of books and audio-visual copyright, lacking of the support of software copyright service.

3.2.2 China Copyright Protection Center website (<http://www.ccopyright.com.cn/>)

China Copyright Protection Center is an institution directly under the General Administration of Press and Publication of the People's Republic of China (National Copyright Administration of the People's Republic of China), whose main business includes: being engaged in various copyright-related registration and providing the community copyright legal advice and copyright transaction services commissioned and designated by National Copyright Administration.

3.2.3 China Digital Right Management Website (<http://www.china-drm.com/>)

This website mainly provides total solution for digital right protection, such as the total solution of China-DRM WMDRM digital copyright protection.

3.2.4 Other Domestic Copyright Information Service Websites with Their Respective Characteristics

For example, China Software Union (<http://www.chinasoftwareunion.com/>); The website of Guangdong Copyright Information (<http://www.gdcopyright.org.cn/>); The website of Shanghai Literary and Art Copyright Assertion (<http://www.shalca.com/>); Shanghai Federation of Literary and Art Circles (<http://www.shalca.com/index.php?id=1>); The website of Shanghai Literary and Art Copyright Service (<http://www.shalca.com/index.php?id=269>).

4 SUGGESTIONS AND COUNTERMEASURES ON COMPREHENSIVELY ENHANCING COPYRIGHT INFORMATION SERVICE INTEGRATION LEVEL IN NETWORK ENVIRONMENT

4.1 Copyright Protection Countermeasures in Network Environment

4.1.1 Strengthen the Legal Protection of Database

From the view of international development trend, China is also necessary to consider whether to establish a special right protection system of database. As a developing country, the key problem of China is not whether to establish special right protection of database, but how to establish such a system to ensure the interests balance of database producers and database users.

4.1.2 Improve the Legal Protection of Technical Measures in Network Environment

At present, the legal protection level of technical measures is mainly linked with the software copyright. However, from a development point of view, the technical measures will soon be linked with the various network works to become a protection means widely used by copyright owners. China must give the necessary attention to the new development of international copyright protection, and seriously consider how to improve the copyright protection of technical measures in our network environment.

4.1.3 Improve the Legal protection of Right Management Information in Network Environment

To improve the legal protection of right management information, China's legislation should provide for the content, protection scope, limitation scope of the right management information.

4.1.4 Strengthen Legislation and Law Enforcement of the Network Copyright and Promote the Harmonious Development of the Network Communication Environment

Ability to effectively curb internet piracy is the law enforcement capabilities test of China's administrative department. We should strengthen the special campaign against internet piracy. "Information Network Transmission Right Protection Ordinance" published by State Council should be the basic standard of copyright protection, copyright enforcement and the development of copyright-related industries in network environment, which is our specific legal basis of online law enforcement and copyright protection.

4.1.5 Strengthen Copyright Protection in all Aspects

Promote the development of the software and the copyright product chains timely, and establish software and copyright trade platform, in order to promote the development of copyright industries and curb the piracy. Support the copyright registration of the oblige, besides improve norm system and service system related to copyright registration. Enhance the software copyright protection service; in addition, promote advanced information technology which helps to protect genuine software against piracy.

4.2 Vigorously Promote the Utilization and Service of Copyright Information

4.2.1 Care about R&D of Copyright Information Management System

Service content provided by copyright information management system. It includes: domestic and foreign copyright trade information management, such as copyright license information, the collection and collation of copyright transfer information, etc.; copyright right content management, such as copyright registration, copyright data storage and cataloging, copyright contract registration, copyright pledge registration, etc.; anti-piracy information management, such as tracking the use of works, evidence recording of piracy, information disclosure of pirated works, etc..

Design ideas for copyright information management system. Copyright information

management system is basically a database on the content (work and its various manifestations), which also includes the authors and other right owners information. The information is the basis of handling others to obtain the right to use the work. So a copyright management system usually consists of two main modules: one for content authentication and another for the works use authorization or other transfer rights (such as sole agent). Computer and network can make copyright owners access more information about copyright and the authorization handled more conveniently and efficiently; the network copyright management system will work in the absence of manual intervention which allows the copyright owner to protect their copyright data and automatically handle the authorization. Its biggest advantage is that significantly reduce the transaction costs of copyright. The ideal copyright management system should immediately submit to users the actual content of the works after authorization. The main applications of network copyright management system are to achieve the commercial communication of the work content on the digital network. The user's requirements may include both content of their works and the right to use works; also maybe that he has obtained work and simply wants to use authorization; or maybe that he has obtained authorization but to make changes or addition to the original authorization. In this case, the network copyright management system is the most appropriate solution. In addition, copyright owners should monitor the legitimate use of work on the network by the appropriate measures. In this regard, the network copyright management system may be the only way.

CORDS system of the United States Copyright Office. The electronic Registration record and registration system CORDS of the United States Copyright Office is a successful representative. The system development started in 1993, aiming to achieve online copyright registration applications, registration and preservation of digital works through the internet. The specific objectives include: copyright owners quickly and effectively register, apply for and store copyright works; through accelerating the registration process, improve the service, communication and management of copyright office; control costs of copyright registration and management; easily access to network digital works data by the Library of Congress.

Digital music copyright registration platform (<http://morp.msc.com.cn/>). The digital music copyright registration platform opened on the Music

Copyright Society of China official website. Very different from the traditional music copyright registration, the technical means are based on digital music copyright registration system platform, so that the music producer like the general music lovers, personal studios, record companies and so on can register their works online. Once music works registered, they will have the electronic watermark of ISWC provisional code information (international works code). ISWC is the digital ID works copyright registration number of the music work. The code has international uniqueness that you will have the unique authorization number in the world once owned; the electronic watermark will be attached to the works to facilitate the search in large number of digital information, and then achieve the purpose that from copyright recognition to technological protection.

Summary. From the view of technical support needed by various copyright management business links, the development and construction of domestic and foreign copyright management system exist deficiencies, and development of anti-piracy system, copyright contract management system compared to patent management system, trademark management system is clearly lagging behind. China's copyright information service providers should actively learn from the advanced R&D experience and technology of copyright management system at home and abroad, developing and designing characterized system as soon as possible to meet the management requirements.

4.2.2 Actively Promote the Construction of Copyright Information Service Integration Platform

Strengthen the construction of comprehensive copyright e-government platform. We should be in accordance with the government management functions and information resource of National Copyright Administration, take development and utilization of government information resources as the main line, implement government affairs openness, and improve the e-government application and service levels, besides build a complete and comprehensive e-government platform which mainly releases information, work online, search and process business and meets copyright management.

Narrow the gaps between copyright and patent information service website-building as soon as possible. China's copyright information service website-building is not as good as patent information service website either from the number of sites or

the scale of sites. The administrative departments should adopt policies to support the establishment of some copyright information service website with distinctive features, good service and excellent management measures, driving the overall development of the copyright information service website.

Provide the comprehensive content of copyright information management and service. Copyright information service website should provide the comprehensive content of copyright information management and service, including: domestic and foreign copyright trade information management, such as copyright license information, the collection and collation of copyright transfer information; copyright right content management, such as copyright registration, copyright data storage and cataloging, copyright contract registration, copyright pledge registration, etc.; anti-piracy information management, such as tracking the use of works, evidence recording of piracy, information disclosure of pirated works, etc..

Promote the extensive use of copyright protection technology. Encrypt digital content and use digital signature technology during the network communication to prevent data from being stolen; realize the integrity of digital content with the digital digest and digital watermarking technology to prove that the author's copyright of the work, preventing illegal copying and misappropriation of information; realize description and verification of the digital copyright through the public-key algorithms and standards description; achieve the legitimate use of digital copyright which is also the no copy of digital copyright through binding individual identity; achieve digital works transmission security through the international standard secure transmission protocol, that is, digital security pass during the transmission. In addition, protect the copyright of digital works by the limit of the online hits number, control of reading period, costs payment method, download times, copy pages and technically encrypting the digital work copyright elements.

Actively promote the development of modern content industry. We should vigorously promote the development of digital, web publishing technology with the information technology as support, promote industrial upgrading and technological updating, encourage the integrated development of traditional media and new media, realize optimized combination of the content resource as well as innovative and high technology to build China's modern network print media. Our modern network print media will take the resources, assets, business

as the link to carry out cross-media operation, setting the innovation, manufacturing, marketing, service of content as a whole and forming the modern content industry with China's characteristics and international competitiveness.

Vigorously develop digital publishing. Publishing department should actively implement the strategy of "digital publishing", vigorously develop the new media with the digital content, the digital production and the network transmission as the main characteristics, strive to impact technical high ground of the digital media of the world, strongly support the independent innovation mainly based on the technology development, encourage and support the development, production, publishing and marketing of electronic newspapers, electronic journals, network literature, network database, mobile phone newspapers, mobile phone journals, mobile phone novels and other new digital products with the internet, mobile communication network and digital television network as the main carrier, research and develop the large national network game with independent intellectual property. What's more, carry out systematic research on the digital copyright protection technology.

Construct supervision and promotion platform for publishing industry. Construct supervision and promotion platform for publishing industry, and establish bibliographic information database of publishing industry, enterprise credit database, online trading system, industry monitoring and statistics data system.

Construct the well-developed copyright trade and service system. Construct digital copyright registration center, copyright resource center and international copyright trade center. Encourage the development of identification assessment, authorized representative, copyright registration, copyright financing, copyright auction and other intermediary service institutions, improve the industrial chain of publishing and copyright trade. Cultivate copyright trading brands in the field of electronic technology, improve the financing and the auction procedures of works, and promote the products into the international market, so as to make the copyright convention and the copyright auction become the information industry exhibition brands.

5 CONCLUSIONS

Copyright information service is an integral and important part in the modern service industry's growth. In order to vigorously promote the

utilization and service of copyright information, China should strengthen the copyright protection in network environment, attach importance to the research and development of copyright management system, and actively promote the construction of copyright information service integration platform.

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