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THE ECONOMIC IMPACT OF THE PROTECTION OF DATABASE IN CHINA

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* At the request of its Member States, WIPO commissioned, in 2001, five studies on the economic impact of the protection of non-original databases in developing countries and countries in transition. This study, one of those five, contains the research and opinions of only its author and does not in any way reflect the views or position of WIPO.

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SUMMARY OF THE STUDY

In the latter half of the 20th century, a new database industry came forth with the development of computer science and communication technology. How to guarantee and even accelerate the growth of this new industry has now become one of the problems that demand prompt solution by policy-makers. In the database industry, developers have to spend lots of human and material resources in collecting, sorting out and arranging raw data before providing them to the public in an appropriate way. In order to provide incentives to the database developers for their investment on this industry that is beneficial to the whole society, an investment-award mechanism must be set up so that the public, especially competitors, may respect the efforts of the developers and the developers themselves may be assured of the possibilities of recovering their investment and making some surplus. However, the need of the public for free access to information and the right of the competitors for free competition in the database industry are also to be taken into consideration. One must strike a balance among the interests of database developers, their competitors and the public, by protecting the developers from competitors' free ride on the one hand, and preventing the creation of any monopolization on data on the other.

As a developing country with 1.3 billion people and in transition from a centrally-planned economy to a free-market economy, China must make special efforts to pay more attention to various other social and economic problems that may arise as a result of the legal protection of databases, in addition to the ones that are common to developed countries. This study includes eight chapters, which are described in brief as follows:

Chapter I investigates the *status quo* of the development of database industry in China, which started in the 1980s. In 1984, China became a member of the International Science-technology Database Committee, and in 1987, set up a national information center and decided to establish 134 databases. In 1995, there were about 1,308 big databases, about half of which have provided services at different extensions with a capability between 10~100MB. At present, almost 41% of all the databases available in China are established by government agencies. The past four years saw rapid development of the Internet in China: in 1997, the number of computers with Internet access was 0.29 million, and by 2001, this number has increased to 10 million, representing an increase of about 240% per year. The development of the Internet has brought new opportunities for China's database industry.

Chapter II studies the influence of the proposed WIPO database treaty on the Internet information services. Under the proposed database treaty, every website on the Internet must fully meet the requirements as set out in the definition of "database." As search engines and links serve as the gates and channels leading users to the virtual world, needless to say, excessive obstacles on such gates and channels will bring negative influence to the Internet and the database industry as a whole.

Chapter III discusses the influence of database protection on the publishing industry in China. A legal protection of databases can boost the development of database publishing industry on one hand, but will also stimulate the striving for prior appropriation of uncopyrightable materials on the other. A double protection mechanism, by both copyright and a *sui generis* system, is liable to result in a *de facto* indefinite protection of copyrightable materials due to the possibilities of the databases of being continuously updated.

Chapter IV studies the influence of the proposed WIPO database treaty on education and scientific and technological research in China. As a developing country, China bases its economic growth on the development of education and scientific and technological research, which in turn is based on sufficient bankroll. China's university education is rather expensive

comparing with its GDP per capita. Database protection will further increase the cost of university education in China, thus adding to its existing pressure in this regard.

Chapter V investigates issues concerning the construction of the China digital library. Actually, the China digital library is a database containing a gigantic mass of information. The problems encountered at present involve legal issues on the sources of the works to be included, the legal status of the digital library itself, the legitimate rights of the digital library owner and so on.

Chapter VI studies the implication of a *sui generis* protection for databases on the public access to government information. There is no doubt that government agencies and other government-controlled or government-entrusted corporations are the biggest holders of information in China. Use of such information in an optimal way is conducive to social development and economic growth. Therefore, any legislation on database protection should try to prevent privatization of such government information.

Chapter VII explores the relationship between the rights conferred by a *sui generis* protection of databases and the basic civil rights. The civil rights under direct threat by such a *sui generis* protection include the right of free expression and the right to privacy. Free access to information is the prerequisite of free expression. When property rights and human rights come into conflict, the latter shall prevail.

Chapter VIII discusses five cases related to the legal protection of databases in China, among which are the following three most typical ones:

– Case 1, Beijing Sunshine Database Company *vs.* Shanghai Bacai Data & Information Ltd., on technological contracts and unfair competition, is concerned with appropriation of real time public finance information;

– Case 2, Guangxi Broadcast & Television Newspaper Office *vs*. Guangxi Coal Miner Newspaper Office, on the usufruct of the TV Program Parade Table, is concerned with the protection of TV program timetables;

– Case 3, Qingdao Weather Science and Technology Service Center & Qingdao Observatory *vs*. Qingdao East Mountain Telecommunication Company, is concerned with the utilization of data in weather forecasts.

STUDY

I. THE STATUS QUO OF THE DATABASE INDUSTRY IN CHINA

According to the Draft Treaty on Intellectual Property in Respect of Databases proposed at the WIPO Diplomatic Conference in December 1996, "database" means a collection of independent works, data or other materials arranged in a systematic or methodical way and capable of being individually accessed by electronic or other means. Now, the database industry has been one of the most important bases of information industry, and a key element to measure the level of the modernization of one country. In China, development of the database industry is very quickly. In this article, we will analyze the status quo of the database industry in China.

(a) The start of Chinese database industry

The database industry is developing very fast all over the world. In China, the database industry came into existence very late, about 10 years later than that of Japan, and 20 years later than that of America. There is still a big gap between its development and that of developed counties. The first database was constructed in the late 1970's. It was not until in the 1980s when the exploitation and construction of databases began to expand. In 1984, China became a member of the International Database Committee. In 1987, the National Information Center was set up and it was decided to build up 134 databases. Some of the important databases are listed as the national key science and technology items. At the same time, many well-known multinational corporations have gradually entered the Chinese market. The 1990s saw an in-depth development of the database industry in China. In 1991, there were altogether 500 big databases in China, and only 10% were put into use. In 1995, according to the statistics of *China Database Reference* (Beijing, China Planning Press, 1996), there were about 1,308 big databases, about half of which have provided services at different extensions with a capability between 10~100MB.[1] In the past five years, the construction of databases has achieved great accomplishments. Databases have also been greatly improved in terms of their capability, quality and production value. But compared with the developed countries, the database industry in China still lags far behind.

(b) The formation of China's database industry

(i) Immense increase in the number of databases

Large-scale full-text databases grow very rapidly in China. The situation has been improved since 1990: in the past, the proportion of full-text databases was very low, but now, they have risen to occupy 30% of all the literal databases.[2] As one of the biggest database systems in China, the China Academic Journals Full-Text Database[3] is a comprehensive database of large scale. It exists in both CD and online forms. The database in CD (CAJ-CD for short) contains more than 6,600 kinds of Chinese periodicals, among which about

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1 Tian Feng, "The *status quo* of the Database Industry in China", *Library Science*, 2000, vol. 2

2 Zhang Yuhong "The development of the database in an environment of internet," *Library Journal of Sichuan University*, 2000, vol. 2.

3 See *www.chinajournal.net.cn*

3,500 kinds are in full texts. It has included almost all the periodicals in the field of natural science and some in the field of social science, with about 2,000 periodicals updated every day. The database in CD is famous for its large volume, rapid updating, and accurate searching result. The online database is called CNKI for short (*www.chinajournal.net.cn*). All the journals are sorted into 9 categories, covering science and technology, agriculture, medicine and sanitation, literature, history, philosophy, economics, politics, law, education, electronics and information science. The Chaoxing digital library has been providing online reading materials free of charge since 1998, which has included more than 100,000 books and is still being expanded at a speed of 100,000 pages per day.[4]

(ii) Diversification of databases by medium/carrier

Databases are diversified in terms of their medium/carrier: there are block processed databases, magnetic tape databases, floppy disk databases, Compact Disc databases, portable databases and on line databases. More over, the percentage of online databases is increasing greatly yearly. In 1996, online databases occupied less than 20% of all databases, with the majority in conventional forms, which can be seen as "dead" databases, constituting a waste of resources for the country and enterprises concerned.[5] But, with the development of computer technologies and the Internet, online databases have become an increasingly important form for the database industry. According to the statistics of the China Internet Network Information Center (CCNIC) (*www.cnnic.gov.cn*), there are a total of 45,598 online databases in China. The websites that have their own databases amount to 33,354, which account for 14% of all the websites. About 78% of these websites have their own online databases. Among them, the percentage of websites having more than 3 databases is about 11.7%.[6]

At the same time, audiovisual productions and telecommunication technologies of the multimedia on the Internet have also helped the development of graphic databases and image databases to some extent. This has changed the feature of databases of being composed of solely letters. In addition, with the popularization of the multimedia and CD drivers, multimedia databases have also been dramatically increased.

(iii) Diversification and specialization of the subjects dealt with in databases

In the early years, databases were mainly in the fields of science, engineering and technology. But after 1995, with the popularization of personal computers and reduction of prices of terminals, databases tailored for house and office use expand greatly. Meanwhile, the subjects dealt with in the databases have also been broadened greatly. As of today, the databases established in China have covered almost all the fields. The Chaoxing Chinese Digital Library (*www.ssreader.com.cn*) is a result of the cooperation between a private company and the National Library of China. It covers a wide range of subject matters, which

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4 *http://www.ssreader.com.cn/*

5 Wu Guangyin, Liuxingyu, "Survival of the Home-made Databases," *The Computer World*, October 18, 1999.

6 See *www.cnnic.gov.cn*

can be divided into 38 fields including philosophy, science, technology, ethnography, sociology, politics, law, economics, military affairs, biography, and so on.[7]

(iv) Orientation of databases towards common people

The use of databases has been expanded from serving the needs of the government, banks, scientific researches to facilitating market bargaining, stock transaction, ticket reservation, electronic financing, weather broadcasting and job seeking.

Although it has been only a few years since the Internet began to develop in China, it is now very common for job seekers "to get a job on the Internet." Compared with the 40,000 people showed up in the Job Fairs held in the China International Exhibition Center over weekends, the number of people browsing the webpage of the Zhilian website (*www.zhaopin.com*)–one of the earliest websites for job offering and seeking–is 60 thousand every day, with 140,000 clicks.[8] Such a comparison shows that looking for jobs on the Internet has many advantages over the conventional media: among others, it is more convenient for people to submit resumes and to get more information about the jobs offered. The China Yingcai Website (*www.51job.com*) is the largest database for job offering and seeking: the number of people browsing the webpage website is more than 4,000,000, with more than 200,000 valid positions posted per month and nearly 20,000 resumes added per week; 90% of the 500 largest corporations published by the Fortune make use of the service provided by the China Yingcai Website.[9]

(v) Database producers

The producers of databases usually include government agencies, State-owned enterprises, private companies, and other organizations such as research institutes, academies, colleges. In the past years, government agencies or entities financed by the government were the main database producers in China. Now, the proportion has decreased dramatically, with only 41% of all the available databases produced by the government.[10]

At present, database producers can be roughly divided into three kinds in China:

The first kind is concerned with university libraries or other corresponding technical departments, such as the Tsinghua University Database Research Center (*http://www.tsinghua.edu.cn/eng/index.htm*), and the Computer Technology Department of the Shenzhen University Library.

The second involves professional documentation and information search centers. such as the Searching Center of the Chinese Academy of Sciences and China Society for Scientific and Technical Information (*www.cssti.org.cn*).

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7 See *www.ssreader.com.cn*

8 See *www.zhaopin.com*

9 See *www.51job.com*

10 Xu Kuan, "Several Important Problem in the Development of the Database Industry," *Library of the Colleges*, January 1999

The third is concerned with private or State-owned computer development companies, such as the famous Beijing Wanfang Data Company (*www.periodicals.com.cn*) and the Guangzhou Zhi Yang Company (*www.cdata.com.cn*).

Although all these database producers have their own advantages in one way or another in terms of technology and information resources, none of them has a predominant position in the Chinese market.

Generally speaking, online databases are expanding very rapidly because they are convenient to use, precise and fast, which accounts for the continuous increase in the number of online database producers.

(vi) Production value

Mr. Lü, Vice Minister of the Ministry of Information Industry, said in one of his reports that over the past ten years, the production value of the information industry has kept growing at an average rate of 25%, about 3 times higher than that of China's GDP growth. As of June this year, it is estimated that the production value of the information industry accounts for 4% of China's GDP.[11]

It is difficult to estimate the production value of online databases. But according to the survey done by the CNNIC, website on average, 11.2% of the websites charge a fee for using their online databases, with the percentage for commercial websites ranking the highest (bout 30%), and that for websites established by educational and scientific institutions coming next (around 18%).

The percentage of websites that are available against a fee

Websites	Commercial	Scientific and Educational	Enterprise	Governmental	Average
Percent	29.9%	18.2%	4.7%	11.5%	11.2%

(c) Problems

(i) Low Percentage of Independent Property Right of Database Software

China spends RMB 5 billion *yuan* every year on purchasing the software produced abroad, and the expenditure for this purpose is still increasing by 25% per year. In 1998, the production value of software is 14 billion, 40% of which comes from the production of CD databases and the related software. Most of the software is produced abroad.[12] Advanced countries enjoy a predominant position in the database software market of the world. Out of the total production value 8,800 million US dollars of the world's database market, Oracle

[11] Statistics of the Ministry of Information Industry

[12] Meng Da, "The Industrialization of Home-made Databases," *World of Internet*, October 18, 1999

occupied 33.8%, IBM shared 30.1%, Microsoft shared 14.9%, and other companies such as the Informix and Sybase also had some shares.[13]

(ii) Lack of sound legal basis for development of database industry

The corresponding regulations and laws are still immature, resulting in the lack of a sound legal system. To most Chinese people, the concept of "who uses the data, who pays" has not taken shape, which is harmful to the protection of databases by discouraging the development of the database industry in China.

(iii) Unreasonable structure of databases in China

Most databases (almost 70%) contain second-handed data. The ratio of commercialization is quite low as most data in the databases available now are collected by government agencies. Most of these databases are only available to users within their own agencies, and are seldom open to ordinary users.[14]

(iv) Low quality of databases

Due to their qualities, databases made in China are not competitive. The fact that most of them only use Chinese also constitutes a constraint in satisfying the needs of their users abroad, thus decreasing their opportunity of providing services to other countries.

(d) Trends of the database industry in China

The analysis of the *status quo* of the development of the database industry in China has revealed the following trend in the development of its database industry.

(i) The Government will attach more importance to the development of Databases

Government officials have noticed the on-going switch from an industrialized society to an informatized one. Databases, as an important symbol of and a key driving force behind the development of the information industry, constitute the basis for information services and for formatization. The Chinese Government is now making an active effort in concluding multilateral and bilateral treaties with other countries, in an attempt to be better integrated with the rest of the world and help its companies be included among the 500 top most information enterprises in the world. The Chinese Government has also increased its investment on the electronic information industry, so as to speed up the development of information technologies and the information industry.

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13 "The Tripartite Confrontation of Oracle, IBM and Microsoft in the Database Market", *World of Computer*, May 28, 2001

14 Tian Feng, "The Database Industry of China," *The Study of the Library Science*, February 2000

Over the past years, China has focused its efforts on the development of home-made databases with independent copyright, which has resulted in the more and more widely acceptance of home-made database products. For example, the "Jin Shan Ci Ba", a database to help translating Chinese into English and the other way round, is the widest circulated database in China, which has included a total of 280 million words (English and Chinese words all together) and 7 million lemmas, with 5 million copies issued every year.[15]

(ii) The database industry will keep its momentum of rapid development in China

With the rapidly changing dimensions of the database industry, the subjects dealt with in the databases will continue to be expanded, with a detailed coverage of all fields. More importance will be attached to the development of commercial databases for daily use. The percentage of the first-handed information (information of full texts, and information of graphics or images) will rise, while second-handed information (tabloids and catalogs) will decrease.

According to the prediction by the Ministry of Information Industry of China, the value of the information industry will grow from about RMB 1,000 billion *yuan* in 2001 to RMB 3,000 billion *yuan* in 2005.

(iii) Online databases will grow increasingly and database development technologies will be continuously improved

The database development technologies and online databases will contribute to the permeation of databases. The Internet has helped the spread of database services and made them more convenient to use. In China, the Internet will develop at a more and more fast speed.[16]

Development of the Internet (in million)

Year	1997	1998	1999	2000	2001
Number of online computers	0.29	0.54	1.46	6.5	10
Number of Internet users	0.62	1.17	4	16.9	26.5

From the above table, we can conclude that with the rapid growth of the Internet, online databases will become more and more popular, and that, with the improvement of searching technologies, more and more people will find online databases acceptable and convenient.

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15 *http://www.iciba.net*

16 See *www.cnnic.gov.cn*

(iv) There is an obvious trend of commercialization, industrialization and internationalization of the database industry

Although in China now, almost 41% of all the databases available are established by government agencies and most of the information institutes are financed by government agencies, there is yet a trend of gradually diffusing the databases to the society. This has brought opportunities for the commercialization of the database industry. In addition, databases are changing from mainly focusing on science and technology to focusing more on economic and social issues.

At the international level, there is a trend of internationalization of investments on database production, and collection of information for databases. With the accession of China to the WTO, the database production and online services provision in China will also become more and more internationalized.

(e) Conclusions

The laws and regulations to regulate the database market in China need to be improved. It is equally important to make corresponding policies and stimulating measures to assure the industrialization of information and to accelerate the development of necessary technologies. China has been regard as one of the largest and most promising information markets in the world, which has attracted thousands of foreign information technology companies to help develop this huge market. It is estimated by the Ministry of Information Industry of China that the scope of information market will amount RMB 1,000 billion *yuan* by the end of 2001, and will be expanded to reach RMB 3,000 billion *yuan* in 2005.[17]

[17] *http://www.mii.gov.cn*

II. INFLUENCE OF THE DRAFT WIPO TREATY ON INTELLECTUAL PROPERTY IN RESPECT OF DATABASES

Article 2 of the Regulation on Internet Information Service of the People's Republic of China[18] provides that anyone engaged in the Internet information service within the territory of China shall abide by this Regulation. Although no definition is given with regard to Internet service providers (ISPs), Internet content providers (ICPs), online service providers or operators of commercial websites in the said Regulation,[19] it applies to all online database holders who are nationals of, or have their habitual residence in, or have launched their servers in China. This paper will discuss the issue of what influence will the Draft WIPO Treaty have on those online database holders. Gordon Irlam[20] has talked about the effects of the Draft Treaty on the Internet routing infrastructure,[21] the Internet domain name system,[22] and the Internet search services.[23] Further analyses of the effects on the first two subject

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[18] Regulation on Internet Information Service of the People's Republic of China, promulgated on 2000-09-25 by the State Council of China, and became effective on 2000-09-25

[19] Now it is difficult to define ICPs ISPs and other kinds of Internet information service providers. In fact most of the said providers have engaged in very comprehensive business activities. In *Consumer Privacy Protection Act* (draft) of the U.S. (S. 2606) no definition of ICPs, ISPs or online service providers was given. Section 101 of the draft act provides that: An Internet service provider, online service provider, or operator of a commercial website on the Internet may not collect, use, or disclose personally identifiable information about a user of that service or website except in accordance with the provisions of this title. Section 901 of the draft act provides that: In this Act: (1) OPERATOR OF A COMMERCIAL WEBSITE- The term "operator of a commercial website"–(A) means any person who operates a website located on the Internet or an online service and who collects or maintains personal information from or about the users of or visitors to such website or online service, or on whose behalf such information is collected or maintained, where such website or online service is operated for commercial purposes, including any person offering products or services for sale through that website or online service, involving commerce–(i) among the several States or with 1 or more foreign nations;(ii) in any territory of the United States or in the District of Columbia, or between any such territory and--(I) another such territory; or(II) any State or foreign nation; or (iii) between the District of Columbia and any State, territory, or foreign nation; but (B) does not include any nonprofit entity that would otherwise be exempt from coverage under section 5 of the Federal Trade Commission Act (15 U.S.C. 45).

[20] Gordon Irlam *Software Developers Comments on the WIPO Database Treaty* In the three situations considered, it was not a portion of the database that was extracted but the entire database. Routing involves the entire routing tables being transferred from one system to another. DNS involves the transfer of the entire DNS database from Network Solutions to the root name servers. Searching requires the transfer of the entire contents of a website to the search system for indexing. *http://www.base.com/gordoni/thoughts/wipo-db.html*

[21] These routing tables fall under the domain of the proposed database treaty. As such, a network provider would be able to claim ownership of the routing table constructed from the routing information provided by its subscribers. Doing this would allow the network provider to prevent, or control the way in which others can make use of such routing information.

[22] The ability to claim ownership of databases such as the DNS database could have a potentially severe chilling effect on the Internet. Network Solutions position as sole provider of the DNS database would enable them to charge a high price for access to it. This information contained in this database is fundamental to a user's ability to navigate around the Internet, and essentially Network Solutions would end up owning the Internet.

[23] The generation of an index for a website currently does not fall under the scope of the Copyright Act. Under the proposed database treaty, each website on the Internet fully meets the definition of a database. And, under this treaty the ability to construct an index of a website, which of

[Footnote continued on next page]

matters would apply to all online database holders in general in the whole cyberspace, and the conclusions drawn from such analyses would have little specific relationship to China's realities. Therefore we would concentrate on the third effect. In addition, we would address the following three questions, which have a special bearing on the present legal system in China: (1) Is it an efficient approach to set up a system whereby more private negotiations are needed for "links" to be established? (2) Could the grant of a *sui generis* private right to databases strengthen market monopoly or restrict independent collection of data in China? (3) Is registration of databases really unnecessary?

(a) Impact of the draft treaty on the development of search engine industry?

Most electronic databases are searchable,[24] and the information collected and sorted out therein could either be shared within a specific group of people or completely open to the public. When you give an order in a certain format or key in a random character string, you would be able to see some information that is automatically displayed. However, most databases are not search engines. Search engines are databases of self-aggrandizement. These are databases of webpage files, the majority of which are identified, pursued, assorted and indexed automatically by machine, with a small portion being registered or uploaded by searchable webpage holders, or selected manually by search engine operators.[25] Search engines could process resources stored in website servers or personal computers.[26] There are two types of search engines: individual and Meta. The former compiles its own searchable databases on the web. The latter does not compile databases at all, but searches databases of many other individual engines simultaneously. The former compiles its databases mainly by employing "spiders" or "robots" to crawl through the cyberspace from link to link, which could pursue, identify and assort webpages according to certain rules. When users input keywords or phrases and click the "Affirm" or "Search" button, the former uses certain software to search its databases straightway, and then presents its findings according to some kind of relevance ranking. In order to be able to present the findings according to the users' favorite ranking, it uses the statistics of the frequency of searched character strings in the content sections of webpages as well as those in the HTML META tags. It means that hot words or phrases in the content sections or the HTML META tags could be helpful for certain pages to be presented and ranked preferentially. The latter[27] does not crawl through the cyberspace. Instead, it searches many other individual search engines simultaneously. It presents the results in two ways: rearranging the results from different individual engines and

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[Footnote continued from previous page]

necessity involves retrieving the information from the website would appear to fall under the "right to authorize or prohibit the extraction" terms of the proposed treaty.

24 Databases are shareable data sets. See: Sa Shixuan,Wang Shan, Genaral Theory of Database System, Higher Education Press, 2000, 3rd edition, pp. 4.

25 Ellen Chamberlain, Lesson 1, A Basic Tutorial on Searching the Web, *http://www.sc.edu/beaufort/library/lesson1.html*

26 Most websites allow spiders to crawl through their space from link to link. As far as personal computer is concerned, its resources could also be dealt with by a search engine. For example after installing Napster, Toperson, or Gnutella, users would have to open parts of their computers' disks to the public. The Internet addresses of the computer, names and locations of files, as well as other characteristics of stored resources in the opened parts would be identified, recorded, indexed, updated and read by search engines.

27 Ellen Chamberlain, Lesson 2, A Basic Tutorial on Searching the Web, *http://www.sc.edu/beaufort/library/lesson2.html*

listing them in a new rank, but discarding duplicate entries; displaying multiple lists presented by different individual engines and preserving duplicate entries. In either circumstance it prefers to present the most relevant parts of the results in every list of individual engines. In China, thousands of search engines are being frequently used. A report of the China Internet Network Information Center (CNNIC) suggests that as of June 30, 2001, there were 26,500,000 Internet users and 10,020,000 Internet connected computers in China. According to the same report,[28] 51.3% of all the said Internet users often used search engines and 57.5% of them acquainted themselves with new websites mainly through search engines. According to a report of Jupiter Media Metrix, about 47% of all Internet users search and purchase online products through search engines. However, according to another report submitted by the Technology Academy of Georgia, this percentage has come to 80%. From Table I, we find that most of China's famous search engines are indexing other webpages by transferring the entire contents of a website to their search system. Search engines would also display a summary of an indexed webpage or a description of information of an FTP file. No indexed websites have charged any fee from the search engines for this kind of "extraction" and "utilization."

Table I: Main Search Engines in China

Websites		Search engines (individual or Meta)	Materials transferred and displayed	Fees to the indexed websites	Listed on NASDAQ Stock Exchange
Name	Description				
Sohu.com	In September 2000, SOHU.COM acquired ChinaRen.com, a high-traffic youth website, to become the largest Internet portal in China with a combined registered user base of over 24.4 million and 127 million page views per day. As of April of 2001, it had more than 1,309,000 unique visitors. It has more than 20,000,000 registered users.	Individual	Searching requires the transfer of the entire contents of a website to the search system for indexing. It displays an index and a summary of related contents.	None	Yes

[28] *http://www2.baidu.com/content_more.php*

Sina.com.cn	As of April of 2001, it had more than 1,165,000 unique visitors. It has more than 20,000,000 registered users.	Individual	Searching requires the transfer of the entire contents of a website to the search system for indexing. It displays an index and a summary of related contents.	None	Yes
Netease.com	As of April of 2001, it had more than 1,345,000 unique visitors. In September of 2000, all its webpages were browsed more than 1 billion times. It has more than 20,000,000 registered users.	Individual	Searching requires the transfer of the entire contents of a website to the search system for indexing. It displays an index and a summary of related contents.	None	Yes
21cn.com	One of China's top ten websites	Individual	Searching requires the transfer of the entire contents of a website to the search system for indexing. It displays an index and a summary of related contents.	None	No
263.net	One of China's top ten websites	Individual	Searching requires the transfer of the entire contents of a website to the search system for indexing. It displays an index and a summary of related contents.	None	No
Webgather of Peking University	The best searcher of FTP files. It could also be used to search webpages of the whole cyberspace.	Individual	(1) Webpages: Searching requires the transfer of the entire contents of a website to the search system for indexing. It displays an index and a summary of related contents. (2) FTP files: It displays the file name; the time of files being uploaded, the size of files and the address for downloading.	None	No

According to the proposed treaty, these search engines would be prohibited from transferring and indexing in an unauthorized way of other websites' materials, since "under

the proposed database treaty, each website on the Internet fully meets the definition of a database."[29] Search engines, as surfboards for all of us, might be an inexhaustible gold mine in the virtual world that would keep up a kind of gold fever forever. End users, copyright or trademark holders, trade name or domain name owners, patentees of the online shopping methods or search technologies would be all involved in this fever. The same is true with the database holders whose websites are indexed as well as the search engine holders who index other websites. Should we extend private property rights to the Internet so as to protect the "extraction" right and "utilization" right of database makers? Should we prohibit search engines from free riding on database makers' costly launched and operated websites? To answer this question, it might be necessary for us to evaluate the external effect of a *sui generis* system of database protection on the Internet by reviewing theories that support the concept of "negative community." The theoretical foundation of Grotius and Locke lies in the explanation of how private property rights originate in a world where all the abstract matters are commonly owned by all.[30] In their analyses, they have followed a logic approach instead of a historical one. According to Pufendorf, Locke's "first connection" theory upholds the concept of "negative community." Therefore, it is reasonable to patent the one-click shopping method, the hyperlink and intelligent spider technologies, as it is the relevant labor that has brought them into existence for the first time. However, Locke's theory is so metaphysical that it could not be used to define the property rights of abstract matters such as domain names and advertising words in smart tags. Neither could it be used to settle the cases of Priceman or Seattle Sidewalk. It is difficult to define the "first connection." For example if Coca is bargaining with eZula of trading the word "cola", or Playboy the word "sex", the first connection theory could not explain why these words should be bought by a specific person. Just as Nozick had asked whether, by mixing his tomato juice with the ocean, he could claim property rights in the ocean, the patentees of one-click shopping method and hyperlink technology would claim property rights in the whole virtual world. Locke's theory would lead to intolerable proprietarianism. Grotius had never brought forward some ultimate creeds concerning originality of private property rights, but his Mare Liberum, which articulates the principle of freedom of the seas, also upholds a kind of negative community. Of course private property rights could encourage individuals to bring more intellectual commons into our world, but it also has negative externality. When intellectual commons are divided into separate patches controlled by self-serving appropriators, the world would be less creative. A virtual world whose members must pay a fee when they click on every hyperlink is the same as a physical world whose members must pay a fee when they buy a plane table. They are both inefficient. Therefore we should expand the scale of a positive community on the Internet, since there are no barriers in the cyberspace, intellectual commons of this community would have to be open to the whole world. This means an inclusive positive community should be expanded. Of course some private rights could never influence the whole world but just address the problem of how to determine the extent to which one website may lawfully ride the coattails and use the services of another site. That means their externality is just exploiting another person or group. If they couldn't threat the order of current intellectual property legal systems, both legislators and courts need not create new rules. When negotiation couldn't solve the disputes, private rights should be protected by the court uncompromisingly.[31] With respect to intellectual property conflicts, not parasitical intellectual property rights but innovative or productive ones

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29 Gordon Irlam, *Software Developers Comments on the WIPO Database Treaty*.

30 Peter Drahos, A Philosophy of Intellectual Property, Dartmouth, 1996, pp. 51.

31 Dispersive and enforceable private rights are the basis of an efficient economy. This creed has been proved by classical economics and game theory.

should be protected. Of course it's difficult to determine whether search engines protected by current legislation or indexed websites protected by the draft treaty would enjoy a kind of parasitical intellectual property right. However, it's clear that a private negotiation system would be very expensive under the proposed draft treaty. According to Table II, the displayed ranking of indexed webpages in a single search would be indefinite and most users would just browse the top ten items. According to Table III, the number of items searched out is very large. When private negotiations are adopted to determine the price of indexing and displaying all webpages, the transaction costs would be too high to be tolerated. To eliminate the search engine industry by the proposed draft treaty would make browsing the Internet significantly inefficient.

Table II: Order of Items Presented and Browsing Frequency

Order of Items Presented	Percentage of Being Browsed	Ranking of a specific webpage
Top 10 items	65-70%	Uncertain
The next ten items	20-25%	Uncertain
Other items (usually several hundreds)	3-4%	Uncertain

Table III: Number of Items Obtained by Searching with Various Search Engines

Search engine	Searched phrases	
Name	Gene engineering	Online music
Sina.com.cn	1,116	35,411
Webgather of Peking University	1,425	14,594
Netease.communication	445,000	3,000,000

(b) Is it an efficient approach to set up a system whereby more private negotiations are needed for "links" to be established?

As of April 30, 2001, there were 238,249 websites in China.[32] There are a total of 159,460,056 webpages in all these sites. According to the statistics of CNNIC as shown in Tables IV and V, most of these sites have made links to more than two other websites. Except government websites, more than half of all other types of websites made links to more than two other websites. All websites have an average of 669.3 pages and more than 50% of all websites made links to more than two other websites. If we assume the total number of links these sites made is equal to two times of the average number of its pages, the total number of links in all the websites in China is at least 160,000,000.[33] According to a survey in 2000, more than 89.6% of network companies in China made links to other websites, of which about 37.5% had got no prior permission as to their linking. The percentage of normal

[32] *http://www.cnnic.gov.cn/tj/2.shtml*

[33] According to the Internet Society Organization, a trade association based in Reston, Va., depending on whether a page is privately run or commercial, pages typically have between one and three hyperlinks, or between 50 to 100 hyperlinks, respectively.

and framed links is 70.6% and 6.3%, respectively.[34] We could conclude from these data that unauthorized linking is very popular in China. Under the draft treaty, most of these links would be declared unlawful.

Table IV: Percentage of Websites According to the Total Number of Websites they Link to

Over 51	21-50	11-20	6-10	2-5	None
4.3%	4.8%	9.4%	11.0%	22.7%	47.8%

Table V: Percentage of Websites According to their Types and the Total Number of Websites they Link to

Types / Link to	Government Websites	Enterprise Websites	Commercial Websites	Education and Science Study Websites	Personal Websites
Percentage	%	%	%	%	%
none	25.3	53.0	20.5	43.6	38.9
2-5 websites	30.4	22.0	22.0	19.2	26.4
6-10 websites	16.5	10.5	12.1	10.3	9.7
11-20 websites	14.9	8.2	15.9	12.8	11.1
21-50 websites	10.8	3.1	12.1	6.4	9.7
more than 51 websites	2.1	3.1	17.4	7.7	4.2

On the other hand, many websites are asking to be linked and promoted. For example, seetop.com publishes various ranks of websites everyday. Thousands of websites have registered with seetop.com to promote their sites free of charge. The following table lists the top six sites. Registered websites could easily increase their frequency of being browsed. Since seetop.com doesn't check the materials of linked websites to see whether infringing acts are involved, under the proposed draft treaty, it may have to assume some kind of civil liability. Another website, baidu.com, has contracted with most of China's top 20 search engines to sell words and phrases that would be searched by their users. If a website buys from baidu.com the word "computer", this website will be placed in the first place in the lists of searching results, and all users who search the said search engines by inputting "computer" would get a list of searching results on which the said website is ranked first. Similarly, under the proposed draft treaty, baidu.com and the search engines in question will have to assume some kind of civil liability, as the said website might contain infringing materials.

34 This survey is sponsored by the journal of Electronic Intellectual Property. The Report is published in a internal booklet entitled Report of Intellectual Property Protection and Related Legal Issues of the Ministry of Information Industry, 2000.

Table VI:[35]

Rank of websites	Description
1	More than 1,000 movies for free
2	Free online movies
3	Search engine
4	Beauties in swimsuit and more than 1,000 movies for free, earning RMB 80,000 *yuan* per month
5	Literature for free
6	Flash movies for free

In China, the courts have adjudicated in typical cases concerning unauthorized links to copyrighted materials and uncopyrightable materials. We shall analyze the cases by firstly giving a brief description of China's legislation. In China, there exist no provisions concerning contributory[36] or vicarious[37] copyright infringement. However, Article 130 of the General Principles of the Civil Law (1986) provides that if two or more persons jointly infringe upon another person's rights and cause him damage, they shall bear joint liability. In fact, the People's Courts at various levels have adjudicated many cases in which Internet information service providers have been ordered to bear civil liability for their acts of infringement of copyright and of other rights and interests related to copyright. For example, in *Liu Jingsheng v. Sohu Aitexin Information Technology Ltd.*, due to the direct copyright infringement, works of the plaintiff were uploaded to and published on some websites without authorization. The defendant set up hyperlinks to disputed pages of these websites. Since the defendant hasn't eliminated the disputed hyperlinks as soon as possible, the Second Intermediate People's Court of Beijing decided that the defendant should assume civil liability according to Paragraph 8 of Article 45 of *the Copyright Law* (1990) and paragraph 2 of Article 106 of the *General Principles of the Civil Law* (1986). The former provides that anyone who commits any of the following acts of infringement shall bear civil liability for such remedies as ceasing the infringing act, eliminating its ill effects, making a public apology or paying compensation or damages, etc., depending on the circumstances. Category No. 8 of the infringement acts referred to therein concerns committing other acts of infringement of copyright and of other rights and interests related to copyright. The latter provides that citizens and legal persons who, through their fault, encroach upon State or collective property or the property or person of other people shall bear civil liability.

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35 Copyright © 2000, *www.seetop.com*–All rights reserved. *http://www.seetop.com:5000/all/*

36 In case law, the contributory copyright infringement must satisfy two conditions. The first one is that the contributor has reasonable ability to know that direct copyright infringement is committed. Although the file names were given by end users randomly and the file content has never been transferred through the central server, the court determined that Napster should have reasonably known the direct infringement. The second condition is the material or essential contribution. Napster's search engine and directory give users the link. It constitutes evidence of material contribution.

37 In case law, the vicarious copyright infringement should satisfy two conditions. According to the first one, Napster must have the right and the ability to control direct infringers' action. This condition is self evident. The second one is that Napter have gained direct economic benefit from users' activity. The increase of the traffic and the number of registered end users are regarded as direct economic benefit gained by Napster from piracy of end users.

The Second Intermediate People's Court of Beijing has closed another case regarding links. In 2000, the said Court accepted the lawsuit of Beijing Finance City Network Ltd. v. Chengdu Fortune and Intelligence Software Ltd. In this case the plaintiff, cooperating with the Beijing Subsidiary Bank of the Bank of Construction, produced "the curve of foreign exchange market tendency" and published it on the "foreign exchange channel" of the website, *www.295.com.cn*. The defendant made deep links to the related page on its "Fortune and Intelligence Web." The Court claimed that the parties of this case are competitors in the operation of their respective websites. The defendant's making deep links without prior permission is a kind of unfair competition.[38] On the one hand, in all the cases concerning links, only profitable Internet information service providers are prohibited from making unauthorized links, and it is applied under very restricted conditions.[39] On the other hand, there are rarely restrictive provisions concerning links in the main regulations of China. According to the main regulations listed in Table VII, most links are completely lawful. However, according to the draft treaty, most unauthorized links, especially those unauthorized *image links* or *frame links*, would be prohibited. If so, the order of the Cyberspace would be completely changed. Private negotiating might be effective in solving disputes concerning links, but there is hardly any guarantee.

Table VII: China's Main Regulations Applicable to Links

Materials	Who authorizes the making of links					
	China					
	Copyright Law (1990): General Principles of the Civil Law (1986); Anti Unfair Competition Law (1993)		*Temporary Provisions Concerning the Administration of Internet Websites' Publishing News* (2000)		China Journalism Convention of Network Media (2000)[40]	
	Profitable Internet information service	Non-profitable Internet information service	Profitable Internet information service	Non-profitable Internet information Service	Profitable Internet Information Service	Non-profitable Internet information service
Copyrighted materials	Copyright owners and/or publishers	Copyright owners and/or publishers; no lawsuits has been filed against this kind of service	None	None	None	None

38 *http://www.runsky.com/epublish/gb/paper5/6/class000500003/hwz6217.htm*

39 For example, in the said two cases, only the acts of managers making unauthorized links to works of an author or making links to uncopyrightable materials of a competitor were decided as civil infringements.

40 On April 16, 2000, China's top 23 news providing websites subscribed to the "China Journalism Convention of Network Media."

Others	News	None	None	Article 14 provides that Internet websites should obtain prior permissions from the Press Office of the State Council, if they want to make links to foreign websites to provide news or reprint news published by foreign news media or Internet websites. Article 15 provides that violators should be bereaved of their qualification of publishing online news.		It provides that members of this Convention could make links to each other without prior permission. However, other commercial websites should obtain authorization before making links.	None
	Others	None	None	None	None	None	None

Table VIII: Influence of the Draft Treaty on Links

The draft treaty	Related regulations in China	Influences
Paragraph 6 of Article 2 provides that "utilization" means the making available to the public of all or a substantial part of the contents of a database by any means, including by the distribution of copies, by renting, or by on-line or other forms of transmission, including making the same available to the public at a place and at a time individually chosen by each member of the public.	According to Articles 45 and 46 of the Copyright Law, Articles 2 and 20 of the Anti Unfair Competition Law and Article 130 of the General Principles of the Civil Law, those unprofitable Internet information service providers who make unauthorized links to works or those profitable Internet information service providers who make links, especially who make *image links* or *frame links* to any kind of materials should bear joint liability.	Since links, especially image links or frame links could be deemed as "on-line or other forms of transmission" or a part of "on-line or other forms of transmission", those authorized links to pages containing unauthorized materials of a database or those unauthorized links to materials of a database would constitute infringements of a database maker's intellectual property right granted by the proposed draft treaty.

Article 5 of Alternative A (ANNEX): In appropriate cases, Contracting Parties may authorize the judicial authorities to order recovery of profits and/or payment of pre-established damages even where the person who is responsible for the infringement did not knowingly, or with reasonable grounds to know, engage in infringing activity.	According to Section 3 (Civil Liability for Infringement of Rights) of the General Principles of the Civil Law and Chapter 5 of the Copyright Law, if the accused person who is responsible for the infringement does not knowingly, or with reasonable ground to know, engage in infringing activity, no liability should be imposed upon him. According to the Decision of the Standing Committee of the National People's Congress Concerning Punishment of the Crime of Copyright Infringement, without profit-making purpose, any person who is responsible for the infringement shouldn't be charged with criminal violations. According to Article 130 of the General Principles of the Civil Law as well as Articles 2 and 20 of the Anti Unfair Competition Law, only managers could commit civil infringement as to uncopyrightable materials. Such legislation is distinctly different from the draft treaty.	Whether he is a profitable Internet information service providers or not, any website operator, by "extracting" or "utilizing" any kind of materials of a database maker without the latter's authorization, should assume civil or criminal liability for infringement of a *sui generis* intellectual property right granted by the proposed draft treaty, even if the person who is responsible for the infringement did not knowingly, or with reasonable grounds to know, engage in infringing activity. Another website that makes links to the said person responsible for the infringement would commit joint infringement according to article 130 of General Principles of the Civil Law. In the case of *image links* or *frame links*, the cognizance of joint infringement would be beyond all doubt.
Article 7 of Alternative A (ANNEX) Information Right: Contracting Parties may provide that the judicial authorities shall have the authority, unless this would be out of proportion to the seriousness of the infringement, to order the person responsible for the infringement to inform the right holder of the identity of third persons involved in the production and distribution of the infringing goods or services and of their channels of distribution.	Article 14 of *Regulation on Internet Information Service of China* (2000)[41] provides that Internet connection providers should record information regarding users and keep it for at least 60 days.	Since website operators who make links, especially *image links* or *frame links* would be charged with joint infringements, they would be ordered to provide the said information on their users or linked websites that are engaged in acts concerning unauthorized extraction or utilization of a database.

[41] Article 14 provides that an Internet information service provider who provides news, publication or electronic bulletin boards shall keep records of the information it provides, the publishing date and the Internet address or domain name. An Internet information service provider who provides service of Internet connection shall keep records of the connection time,

[Footnote continued on next page]

(c) Is registration of databases really unnecessary?

Article 9 of the draft treaty provides that the enjoyment and exercise of the rights provided for in this Treaty shall not be subject to any formality. Therefore this article has set forth the principle of formality-free protection. The protection provided for in the proposed Treaty may not be subject to registration, notice, marking, or any other formality. Although China doesn't provide for registration of any kind of databases, but it also doesn't grant a *sui generis* protection to databases. When similar *sui generis* protection system in respect of databases is instituted, the registration-free protection would cause some real trouble.

In China, Internet information service providers usually reprint or excerpt materials from other websites. Most users publish theses, comments or reports using their virtual identities. It might be difficult or even impossible to authenticate or prove their legal identities. in addition, the disputed materials might have been repeatedly reprinted or excerpted by many such providers, which makes it very difficult to determine which website is their original sources or at what time they are firstly published thereon. Although Article 3 of the Interpretation of the Supreme People's Court on Some Issues of Trying Copyright Cases on the Internet (2000) provides that unless authors or the said providers has explicitly asserted that an authorization is needed, all the other websites could reprint or excerpt related materials freely only if they have paid the compulsory license fee and have given clear indication of the sources, all websites would like to reprint and excerpt related materials without paying the said fee and in disregarding any prohibitive assertions. As far as the disputed materials are concerned, most sites could obtain a copy without the said assertions by using search engines. They could also defend themselves by arguing that they don't know whether the author is a member of a royalty collective management organization and that they don't know to whom the compulsory license fee should be paid. Therefore all websites would like to ride on others, anticipating that they will not be discovered or accused of by copyright owners. When there are enough people to claim for copyright protection, the Internet will be full of lawsuits and would become the "treacherous English Channel." For example, Yangjian, with the pseudonym of Haiyang, published an article[42] on *www.163.com* on November 21, 2000, which is later reprinted by many other websites without authorization. On February 21, 2001, Yangjian filed a lawsuit against most of the top thirty websites of

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[Footnote continued from previous page]

account number, the Internet address or domain name and the telephone number of their users. Such records shall be kept for 60 days and provided to relevant authorities for checking when so requested. Article 15 provides that Internet information service providers shall not produce, copy, publish or distribute information having the following contents:

(1) against the Cardinal Principles set forth in the Constitution;
(2) detrimental to State security, State secrecy, State power and national unification;
(3) detrimental to State honor and interests;
(4) instigating ethnic hatred or discrimination and detrimental to national unity;
(5) detrimental to State religious policy, propagating heretical or superstitious ideas;
(6) disseminating rumors, disrupting social order and stability.
(7) disseminating obscenity, pornography, force, brutality and terror or crime-abetting;
(8) humiliating slandering others, trespassing the lawful rights and interests of others;
(9) other contents forbidden by laws and regulations.

Article 16 provides that when an Internet information service provider finds that information falling within the scope as provided by Article 15 is being transmitted in its website, it shall terminate the transmission immediately and keep record and report to relevant authorities.

42 *http://www.cnmaya.com/maya/cnnews/science/kjyw/item/2001_02/452461.shtml*

China with the Second Intermediate People's Court of Beijing, claiming for copyright protection. It is so far the lawsuit of greatest importance concerning online copyright protection.

As said before, most uncopyrightable materials could be reprinted or excerpted without authorization or paying any kind of compulsory license fees. According to the draft treaty the said reprinting or excerption should be prohibited. It would be better if there exits a system for electronic registration of all kind of databases. When authorization of "extraction" or "utilization" and payment of compulsory license fees are necessary, it would be very convenient for Internet information service providers to search for documents of registration. Since the draft treaty goes for a formality-free protection system, lawsuits similar to the case mentioned above would involve even more websites. A cyberspace full of lawsuits will by no means be efficient.

III. INFLUENCE OF THE DRAFT TREATY ON THE PUBLISHING INDUSTRY OF CHINA

(a) Expansion of the database publishing industry

Enactment of the proposed draft treaty or similar domestic legislation would boost the development of the database publishing industry. We would like to discuss two aspects of this issue in the following passages:

(i) Striving for prior appropriation of uncopyrightable materials

According to China's legislation, four kinds of materials are not copyrightable. Except works the publication or distribution of which is prohibited by law, the prior appropriation of the other three kinds of materials would be beneficial. For example, national secrets and archives will be disclosed to the public after a certain period of time by administrative orders of the government or automatically in accordance with the conditions set out in Article 8 of the National Secret Protection Law (1989), Article 7 of the Regulations for Protecting Secrets of Science and Technology (1995) and Article 19 of the Amendment of the National Archives Law (1996). In the past, few materials of this kind have been published, because compilation of this kind of materials will not lead to creation of derivative works, and reproduction or transmission of these materials is legally permitted. For example, Article 5 (11) of the Regulations for the Implementation of the Copyright Law (1991) provides that compilation is the creation of a work by assembling a number of selected pre-existing works in whole or in parts, according to an arrangement designed for a specific purpose. However, the draft treaty awards database makers of materials of this kind with the rights of extraction and utilization. Upon disclosure by administrative orders or automatical disclosure in accordance with relevant conditions, it is the archives at various levels that have the advantages in selecting and assembling those related materials. Therefore database makers of such related materials are mostly State agencies. Although there might exist exception provisions concerning "government data", State agencies could privatize these valuable databases by providing individuals with monopolized access to these materials or consigning them to private companies who would then include them in their privately owned larger databases. Such prior appropriation of materials by way of making databases or publishing information therein would make independent collection of those materials economically impractical.

(ii) Double protection granted to copyrightable materials contained in databases would result in more copyrighted works' being collected into databases

Paragraph 3 of Article 1 of the proposed draft treaty provides that protection accorded by it is independent of any other form of protection. The protection would therefore be of a new or independent nature. Consequently, the proposed Treaty provides cumulative protection by according different rights to databases or to their contents. It should be pointed out that the proposed new protection does not replace any of the existing forms of protection that apply to databases or their contents. On the other hand, several definitions contained in the treaty are problematic. The definition of "database" is all-encompassing and will include many things that are not traditionally considered as databases, such as collections of government documents. The term "substantial" also creates troubles because it takes into account the database maker's perceived lost value in the marketplace. Under this definition, it is reasonable to assume that unauthorized copying or transmission of even small portions of information from a database would be considered as "substantial extraction" or "substantial utilization" of the database and would constitute violation of the treaty. In fact, according to Paragraph 5 of Article 2 of the draft treaty, "substantial part" means any portion of the database, "including an accumulation of small portions." In practice, repeated or systematic use of small portions of the contents of a database may have the same effect as extraction or utilization of a large, or substantial, part of the contents of the database. Absence of the principle of reasonable use may preclude database users from using any bits of the information they receive from a database if the database maker charges for that use. Therefore where protected "databases" are concerned, the draft treaty would prohibit any unauthorized person to: (1) extract, use or reuse all or a substantial part in terms of quality or quantity, of the contents of a database if such an act is in conflict with the database owner's normal exploitation of the database or if it adversely affects the actual or potential market for the database; (2) engage systematic extraction, use or reuse of insubstantial parts in terms of quality or quantity, of the contents of a database if such an act cumulatively conflicts with the database owner's normal exploitation of the database or adversely affects the actual or potential market for the database.[43] It is also unclear as to when the term of protection begins. It seems from the language of the treaty that any changes to a database (i.e., any addition of data) will reset the clock for protection purposes. This will give database makers an infinite copyright in their databases. If the makers would like to adapt the databases again and again, they could obtain permanent protection very easily. Therefore more and more copyrighted materials would be collected into databases and gain protections of both copyright legislation and database legislation.[44] According to Table II, the copyright holders of the nine kinds of copyrighted materials would strive for obtaining the said double protection. For example, since internally circulated materials and original national secrets have been endowed with market value, most of such information would be collected and published in databases once the administrative restrictions on their circulation or publication are removed. Privatization of the original government data would also lead to the expansion of the database publishing industry.

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[43] Peter Jaszi, Some Public Interest Considerations Relating to H.R. 3531 Database Investment and Intellectual Property Antipiracy Act of 1996, *http://arl.cni.org/info/frn/copy/peter.html*, Although the passage concerns H.R. 3531, I think it is applicable to the draft treaty.

[44] In practice, SSreader, National Digital Library, Tongfang's Database of Academic Periodicals and so on have contained a lot of copyrighted materials.

(b) Influence of the draft treaty on the reshaping process of China's publishing industry

China's publishing industry is now experiencing a kind of important revolution with Chinese characteristics. In the U.S., more and more books are being published electronically on the Internet. Corporations such as Microsoft and Adobe have entered the electronic publishing industry. However, they just sell electronic books at a high price in the same way as Bookoo.com of China. *Bookoo* is the largest e-book publisher and distributor in China. Currently Bookoo focuses on publishing and distributing e-books, providing books and publishing information online, building Internet publishing applications and developing marketing services for its partners. Bookoo owns the largest group of Chinese e-book readers in Asia and North America. It has acquired almost 80% of the Chinese best-sellers, including works by authors such as Wang Shuo, Jia Pingao, Chi Li, Fang Fang, and Er Yuehe. "Bookoo already owns copyright in thousands of electronic books. Bookoo is the preeminent company in this field, and the *dominant force* in China (quoted from *http://www.bookoo.com.cn/help/ensev.asp*)." Internet users could finish *online payment* in a few seconds and download its electronic books at any time in the following 30 days. Bookoo usually obtains an exclusive right to use the electronic works for less than 10 years from copyright holders, who receive a pre-determined remuneration and royalties changeable according to the frequency of the works being downloaded. This system seems rather fair, since end users just pay for what they download. It applies to the transfer of expensive items in a single purchase. As far as large academic databases are concerned, this system is of no efficiency. The Beijing SSreader Co., in cooperation with the Zhongshan Library of Guangdong Province, has launched the largest digital library of the whole world on the Internet. *The SSreader digital library* has more than 250,000 online books. At least 34 academicians of the Chinese Academy of Sciences and the Chinese Academy of Engineering have authorized this digital library to put all of their works on the Internet. Users could also use some databases of the library free of charge. For example, all documents of 860,000 patents collected by the Chinese Patent Office could be searched and read free of charge on the Internet. Although some books are completely free of charge, most users are encouraged to buy a card and enjoy all kinds of resources in the databases of the library. The price is just 100 *yuan* for one year and its holder could read any materials at any time and print any kinds of materials without infringing copyright. This library not only publishes new works, but also receives published books. It assigns 5% of the total revenue to publishing companies and 10% to copyright holders. Most of its present users have at least a Bachelor's degree and more than 18% of them have a Master's or Doctor's degree. At present, SSreader is not only the largest digital library of the world, but also the most famous online publisher of China. It has created a new business method for the publishing industry. If this method becomes dominant in the future, China's publishing industry would have remarkable changes. The main features of this new industry would include the following aspects:

(1) Most books would be published firstly in databases of digital libraries.

(2) Most readers would buy a card for downloading and reading e-books of the digital libraries instead of trying to buy and possess a single book in paper or electronic version.[45]

[45] In 2000, the total profit of the publishing industry is 5.27 billion yuan. (See: an internally circulated booklet entitled "Handbook of Statistics of the Press and Publishing Industry", pp. 98, a study sponsored by the Ministry of the Press and Publication.) If all the Chinese bought the 100-*yuan*-card of SSreader, the total income of SSreader would be 130 billion *yuan*. Since the cost of digitization and transmission of e-books is close to zero and only about 20% of

[Footnote continued on next page]

(3) Expiration of copyright protection terms would result in free use of related materials.

Tongfang's business method[46] would bring about similar changes to the publishing industry of periodicals.

Theoretically, the draft treaty or similar legislation would protect the databases of SSreader or Tongfang and would become the legal basis for the future publishing industry. However, since databases of the said corporations have been successfully protected by techniques and almost no piracy has been heard of so far, a *sui generis* protection granted to databases might be useless. On the other hand, the draft treaty or similar legislation would become obstacles on the way of the revolution of China's publishing industry. According to the logic of the future publishing industry, expiration of copyright protection terms would result in the free use of the related materials. In fact, one can obtain millions of this kind of materials free of charge on the Internet. For example, SSreader and National Digital Library are providing free access of such materials. With the help of the search engines of Sina.com.cn, sohu.com and so on, users can obtain thousands of URLs providing various free e-books.[47] According to copyright laws, reproduction and transmission of this kind of materials need no authorization. Therefore, free reproduction and transmission of the said materials would be lawful. On the contrary, the draft treaty prohibits "extraction" or "utilization" of any kind of materials contained in databases. Therefore free reproduction and transmission of the said materials would be unlawful in the future. According to the draft treaty or similar legislation, practices that are presently very popular on the Internet would be prohibited in the future.

[Footnote continued from previous page]

all its income would be paid to copyright holders or other publishers, the total profit of SSreader would then be much larger than the total profit of the whole publishing industry in China in 2000.

46 China has also launched a database of periodicals, the largest of its kind in the whole world, on the Internet. In 1994, Tongfang Co. of the Tsinghua University started to produce the CD version of "China Academic Journals"(CAJ-CD). By now, it has collected the full texts of more than 6,600 kinds of periodicals in Chinese and English. It has included most periodicals of all specialties circulated in China and have them published almost at the same time as the paper version of the periodicals. It has now issued more than 300 CDs, which include 126 databases and the full texts of more than 5,300,000 academic articles. The largest digital periodical of the world as it is, its volume is still being increased very rapidly. The online version of CAJ (called CNKI) has been published on the Internet by means of Mirror Image or Remote Login. Tongfang has now published CD and online versions of many other kinds of databases, such as Newspaper Databases,[46] Meeting Databases,[46] Databases of Masters' and Doctors' Treatises,[46] China's Medicine Knowledge Databases, China's Scientific Quotation Databases, China's Scientific Measuring Guideline Databases and so on. Wanfang Data Co., Ltd. has launched another *digital periodical library* on the Internet. It has collected updated academic theses of more than 2,000 periodicals and its databases are being expanded very rapidly.

47 Wei Yanliang, *Characteristics and Related Legal Issues of Ebook Market of the U.S., Copyright,* April 2001, pp. 33.

(c) What will be the destiny of three kinds of collection?

In the traditional publishing industry, there are three kinds of collection that would lead to the creation of databases: independent collection; further collection and secondary collection.

Independent collection might result in the creation of similar databases. According to the draft treaty, independent collection is lawful. When subsequent independent collecting is impossible or more costly, prior appropriation of some data would be an advantage in competition. Therefore prior appropriation of some data is of importance. However, theoretically it's impractical or economically inefficient to provide proofs for the prior appropriation of materials of large quantity in databases or for the independence in collecting the said materials. Of course when materials could be freely reprinted or excerpted from other publications or are freely flowing on the Internet, no independent collection should create any monopolizing right in such materials. Charging users for "extracting" or "utilizing" materials that are freely flowing in the public domain would distort the prevalent rule of onus probandi. In most cases, database makers would make contracts with original producers or holders of data concerning the collection of those data. Therefore apart from database makers, the draft treaty would mainly benefit those producers or controllers of data who would like to restrict the reproduction and transmission of valuable information that haven't come into the public domain. Although the draft treaty would protect all kinds of materials, few database makers would make efforts to collect materials that are already in the public domain.[48] Since the draft treaty gives market value to all kinds of data, producers or holders of data, especially those of uncopyrightable data, would make contracts with database makers to have their data firstly published in a database and wouldn't provide them to any other media before the such publication. Therefore independent collection would not happen very often when the draft treaty or a similar legislation is enacted in China.

Further collection means the collection of data from existing databases and their assembling into a new database. In the future, some database makers might mainly collect data by making contracts with original producers or controller of data, but others would assemble these data again and again to satisfy end users. The draft treaty might be useful to maintain a kind of legal order among these database makers, but according to SSreader and Tongfang's practices, technology has done a good job in this respect.

Secondary collection means the creation of databases of tabloids, indexes or catalogs. In China most databases are products of secondary collections.[49] Since the draft treaty would prohibit cumulative extraction of small portions of a database, most unauthorized secondary collections would be prohibited.

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[48] In China, most database makers are mainly collecting materials within copyright protection terms, materials just removed from administrative restriction of publication or circulation and updated materials without originality.

[49] Guan Feixia, Current Status and Development of China's Database Industry, Transactions of China's Library, 1998, (6) 5.

(d) Database trade would change the patterns for foreign products and capitals to enter China's publishing industry

Foreign capitals are prohibited from entering most fields in China's publishing industry. The main pattern for foreign cultural products to enter China's market is to export books, periodicals and newspapers to China. The scale of the said exportation is very small. For example, in 2000, the total number of books, periodicals or newspapers exported to China is only 14.13 million[50] and the total number of audio or video products and electronic publications exported to China is only 1.17 million.[51] According to the analyses made in Paragraph 3.2.1 above, most materials would be firstly published in electronic databases and international trade of databases would thus become the main pattern for foreign cultural products to enter the Chinese market. In the future, China's users would be able to use foreign databases similar to SSreader and Tongfang. Accordingly foreign capitals would enter China's publishing industry so as to collect data in China. If so, enactment of the draft treaty or similar legislation would be necessary.

(e) Who would control the upstream parts of the database publishing industry?

There are no statistics on the controllers of the upstream parts of the publishing industry. No one could tell whether there exists any group of controllers who have similar property structures or share similar value tendencies. In my view, database makers having the advantage of making contracts with original producers and controllers of data would be members of such groups. As the whole publishing industry is still under the control of public funded units, these members would mostly be legal persons with official background. With the acceleration of the privatization process of the publishing industry after China's accession to the WTO in 2001, in a few years' time, private enterprises or individuals would become such makers.

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50 It includes 2.08 million volumes of books, 6.46 million volumes of periodicals and 5.589 million pieces of newspapers. See: an internally circulated booklet entitled "Handbook of Statistics of the Press and Publishing Industry", pp. 13.

51 It includes 4,330 cassettes, 11,340 CDs, 1,108 VCDs and 901,082 pieces of electronic publications. See: an internally circulated booklet entitled "Handbook of Statistics of the Press and Publishing Industry", pp. 14.

IV. INFLUENCES OF THE WIPO DRAFT TREATY ON CHINA'S SCIENTIFIC AND TECHNICAL RESEARCH AND EDUCATION

(a) What kinds of databases are being used in the fields of education and scientific research?

First of all, users could buy electronic or non-electronic databases from the market. For example, they could buy a book entitled "Collection of China's Computer Laws" or a CD entitled "Warehouse of China's Classic Music."[52] Of course students, educators, researchers or technical service providers need to buy many databases in the form of books or CDs, but they obtain most information from libraries or other public units completely free of charge or just paying a trivial service fee.

Currently China has the second largest number of both online computers and Internet users in the world.[53] A large number of Chinese students and scholars are using the electronic databases on the Internet, which are very helpful to them. For example China National Library, in association with hundreds of local libraries of China, has launched *a digital library* on the Internet. All users could purchase two kinds of *cards* and read more than 170,000 volumes of books of the digital library on the Internet. The digital library is being expanded with 200,000 new pages added on the Internet per day. The cards cost only 30 *yuan* and 100 *yuan*, respectively. The former card permits its users to browse or print any number of pages of books from the digital library for one month, and the latter for one year. These cards could be bought from many online shops, and the transaction will be done in just a few minutes. The China Digital Library Ltd., with the National Library as its largest shareholder, has started the ambitious project of digitizing most libraries' resources of the whole nation and putting them on the Internet.

Beijing SSreader Co., in cooperation with the Zhongshan Library of Guangdong Province, has launched the largest digital library of the whole world on the Internet. *The SSreader digital library* has more than 250,000 volumes of books on the Internet. At least 34 academicians of the Chinese Academy of Sciences and the Chinese Academy of Engineering have authorized this library to put all of their works on the Internet. Users could also use some databases of the library free of charge. For example, all documents of 860,000 patents collected by the Chinese Patent Office could be searched and read free of charge on the Internet. Although some books are completely free of charge, most users are encouraged to buy a card and enjoy all kinds of resources in the databases of the library. The price is just 100 *yuan* for one year and its holder could read any materials at any time and print any kinds of materials without infringing copyright. This library not only publishes new works, but also receives published books. It assigns 5% of the total revenue to publishing companies and 10% to copyright holders. Most of its present users have at least a Bachelor's

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[52] These kind of CDs are very cheap. For example "Warehouse of China's Pictures" is a database including 10 CDs and its price is just 600 yuan. "Art Corridor of the World" is a electronic database including 150 artists' 1500 paintings and its price is just 75 yuan. Source: Federal Software Ltd. of China.

[53] Current estimates list China's Internet population at 26.5 million users (CNNIC, July 2001) and the U.S. at 130 million users (AC Nielsen Corp. March 2000). China's online population jumped from 1.5 million to 8.9 million during 1999. According to projections provided by Morgan Stanley (1999), Internet users in China are expected to reach 205 million by the year 2010, surpassing the U.S. in online population.

degree and more than 18% of them have a Master's or Doctor's degree. "*Home of Students*" has launched a digital library entitled "*China Book Net*." It is being expanded very rapidly and would provide 20,000 volumes of books on the Internet by the end of 2001. The Library of Peking University, together with the Founder Group, has launch the *Digital Library of Peking University* on the Internet. Although there are not many online books in this digital library, they are all newly published books and completely free of charge. Many provinces and municipalities have also their own projects to build up their own digital libraries. For example, Shanghai and Liaoning have put some digitized resources on the Internet.

China has also launched a database of periodicals, the largest of its kind in the whole world, on the Internet. In 1994, Tongfang Co. of the Tsinghua University started to produce the CD version of "China Academic Journals"(CAJ-CD). By now, it has collected the full texts of more than 6,600 kinds of periodicals in Chinese and English. It has included most periodicals of all specialties circulated in China and have them published almost at the same time as the paper version of the periodicals. It has now issued more than 300 CDs, which include 126 databases and the full texts of more than 5,300,000 academic articles. The largest digital periodical of the world as it is, its volume is still being increased very rapidly. The online version of CAJ (called CNKI) has been published on the Internet by means of Mirror Image or Remote Login. Tongfang has now published CD and online versions of many other kinds of databases, such as Newspaper Databases,[54] Meeting Databases,[55] Databases of Masters' and Doctors' Treatises,[56] China's Medicine Knowledge Databases, China's Scientific Quotation Databases, China's Scientific Measuring Guideline Databases and so on. Wanfang Data Co., Ltd. has launched another *digital periodical library* on the Internet. It has collected updated academic theses of more than 2,000 periodicals and its databases are being expanded very rapidly.

In addition to the above mentioned databases, most colleges, institutes or other scientific research institutions have bought many other electronic databases from abroad[57] and provide their students, faculty members or employees with free access to the databases. Most of these institutions have already set up their own LANs where users can share these digital libraries or databases without paying too much additional fees. In a very undeveloped country whose students and scholars have little means to support highly cost academic activities, such databases are playing a very positive role.

(b) What is the business method of the database industry?

Although the National Digital Library provides many copyrighted materials, and the SSreader Digital Library, the largest online library of the world, in addition, publishes many new materials under copyright protection, they only charge the minimum royalties and a small service fee. Most libraries of colleges and universities have bought databases from home and abroad, and end users of their LANs could access them for free. In fact, the business method adopted by the database producers is that they mainly target on institutions instead of

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54 It includes most papers of China since 1949 and will add 1,200,000 new articles every year.

55 It collects documents of at least 2,000 meetings held in China and sells them mainly on the Internet.

56 It has collected more than 50,000 treatises of master's and doctor's degrees since 1997.

57 For example the *Peking University* has bought many *databases made abroad* for its students and faculty members.

individuals for profits. Tongfang and other producers of electronic databases are more like Internet content providers now. Although the end users or the actual customers are individuals like students, scholars or engineers, those who purchase the databases are mainly the institutions of the end users. For example, *Tongfang's databases* are mainly sold to colleges, universities, research institutions, government agencies and enterprises. The students, faculty members, officials or employees of these institutions are then authorized to use these databases completely free of charge. The following tables imply that all databases are very large and very expensive, so individuals would only be able to use them when the institutions to which they belong have bought them. This would save students and experts a lot of money for the information they need. For example, an individual who wants to search databases listed as No. 1 through No. 3 don't have to pay 16,970 *yuan* to obtain the passwords for the databases through Remote Login. Neither does he need to spend 132,840 *yuan* for the CDs containing periodicals from 1994 to 2001. Another famous database, "*China Law Retrieval System*," produced by Yinghua Science and Technology Ltd. of the Peking University adopted the same business method as Tongfang. Its database contains more than 60,000 legal documents. It is published in 6 versions and the main purchasers are institutions, not individuals. We can see from Table IX that all versions, including the updated versions, are very expensive. Since most end users access the databases from the LANs of the institutions to which they belong, they could search and browse the databases completely for free. Therefore in accordance with the business method of the database industry, China's end users could obtain more information with less money.

Table IX: Materials Contained in the Databases

No.1: Database of Science and Engineering (A)			No. 2: Database of Treatises	No. 3 Database of Meetings
Number of Journals Published			Number of Treatises of Masters' and Doctors' Degrees	Number of Meetings' Corpora
Full Text	Summary	Related Articles		
610	210	1,450	1,600	320

Table X: Price of Databases Containing Materials of the Year 2001 (*yuan*)

No.1			No.2			No.3		
CD	Mirror Image	Remote Login	CD	Mirror Image	Remote Login	CD	Mirror Image	Remote Login
8,200	9,180	11,720	2,880	3,740	4,320	620	810	930

Table XI: Price of Databases of Periodicals from 1994 to 2001 (*yuan*)

Products	CD				Mirror Image				Remote Login
Databases	94-96	97-99	2000	2001	94-96	97-99	2000	2001	2001
Science and Engineering (A)	8,000	20,340	7,740	8,200	9,760	22,100	8,490	9,180	11,720
Science and Engineering (B)	8,000	20,340	7,740	8,200	9,760	22,100	8,490	9,180	11,690
Science and Engineering (C)	8,000	20,340	7,740	8,200	9,760	22,100	8,490	9,180	11,730
Total Price of Databases of Different Periods	24,000	61,020	23,220	24,600	29,280	66,300	25,470	27,540	35,140
Total Price of these Databases from 1994 to 2001	132,840				148,590				35,140

Table XII: Price of All Versions of "China Law Retrieval System" (*yuan*)

Version	Number of end users	Price of the database	Price of updating (all versions could be updated every two months)	Total
Single computer	all users of the institution	4,980	1,600	6,580
Network of small scale	50	9,800	3,000	12,800
Network of medium-scale	200	19,800	5,000	24,800
Network of large scale	500	39,800	9,000	48,800
English Version	all users of the institution	6,800	2,400	9,200
Practical Version	1	1,980	900	2,880

(c) How are these databases being used?

In Table XIII, a description is given as to how the said databases are being used.

Table XIII: How Are Databases Being Used?

Types of Databases	Fees and Frequency of Access	Methods of using	
Paper databases and their CD versions	The expense is mostly assumed by individuals, but these databases are rarely used.	In order to save time in searching specific information, individuals might buy a database. However, generally only a very small portion of the database is browsed, analyzed, or used. An even less portion of it is copied. Usually no substantial part of the database could be disseminated.	
Digital libraries on the Internet	The access fee is usually 100 *yuan* annually. Although it is not very comprehensive, some individuals would like to use it more frequently in the future.	Search	Most end users firstly search an electronic database with a search engine. As far as databases of paper version are concerned, users would have to skim related books completely.
		Browse	Individuals would have to browse large amount of information. In respect of an electronic database, temporary copies are unavoidable. The draft treaty defines the term "extraction" as meaning the permanent or temporary transfer of all or a substantial part of the contents of a database to another medium by any means or in any form.[58] Therefore the draft treaty would inhibit browsing on LANs or the whole World Wide Web. Subparagraph (ii) of Article 2 requires that signatories to the Treaty treat temporary copies, such as the ephemeral random access memory (RAM) copies made on servers when a piece of information moves through the Internet, as constituting "extraction" that could violate the exclusive extraction right.
Paper databases of or their CD versions in libraries	Some individuals would like to search these time-consuming databases, because they are free. They are used a little more frequently than the said digital libraries.		

[58] In this sense, the term "'extraction'" is a synonym of "'copying'" or "'reproduction.'" The expression "'another medium'" does not refer to any particular medium. Transfer to the same type or any other types of medium, device, instrument or contrivance capable of recording the transferred material, is a transfer within the meaning of this provision. Reference in the provision to "'any means'" or "'any form'" is meant to cover all means and forms now known or later developed.

		Selection	A very small portion of browsed information is selected.	
		Copy	Parts of selected contents are copied on floppy disks, CDs, hard disks or uploaded to servers.[59]	
		Selection	Copied contents of related databases are discriminated and only parts of them are studied in a more detailed and deep way.	
Digital databases bought by libraries or other scientific and technical research institutes	Since most students or scholars in colleges or other scientific and technical research institutes could obtain Internet service completely or nearly free of charge, these databases are being most frequently used.			
		Utilize	Profitable use	The amount of royalty and used information can be negligible, but writing a thesis or conducting an experiment is very time-consuming and expensive. Therefore individuals could hardly make profits directly from the use of database.
			Appreciation, operation or adaptation without damaging the database market value	Sometimes individuals would like to copy paragraphs, computer programs, computing processes, images, or segments of audio or video files from databases for appreciating, disposing or adapting them later. It is harmless, since it is only personal use and causes no damages to the database market value. An example produced in the PPT format could be viewed, if you click *here*.

[59] Files could be uploaded to some servers providing public services and be downloaded later.

			Uncontrol-lable and usually harmless transmission	Most types of digital contents of a database could be transmitted by means of emails, FTP, *peer to peer* and so on. An example produced in the PPT format could be viewed, if you click *here*.

(d) What's the legal status of the various kinds of materials contained in a database?

The following table shows the legal status of the various kinds of materials contained in a database.

Table XIV: Legal Status of the Materials in a Database

Materials of a database		Legal status according to the draft treaty
Copyright protected Works	Works resulted from recording, arranging or compiling folklore or other kinds of traditional resources	Independent collection is permitted, but native resident could not access related databases freely. Their rights to use, appreciate, or transmit materials contained in databases are deprived. Once data could never be collected or be economically collected independently again, database makers could obtain monopolizing right of related data permanently.
	Internal circulating material	Since all printeries must submit a copy of the internal circulating materials to local administrative organs of press, these organs would become database makers automatically. Other kinds of database makers couldn't come into being, because the area of related materials' circulation is fixed.
	Scientific or technological work under the Patent Law, the Law on Technology Contracts or similar laws	The Patent Office, State agency for technology contracts authentication and similar State agencies have the advantage of prior appropriating related data. They could hold permanent monopolizing rights in some databases.

	Derivative works:[60]	Independent collection of materials from the same database maker should be authorized by the said maker and the resulted database could be protected permanently.
	A kind of foreign derivative work: original selection and collection of materials without originality or works at the expiration of their terms of copyright protection	As databases the draft treaty could protect them permanently. Most people responsible for the infringement would be individuals.
	Dictionary, encyclopaedia	The database maker could control and profit from other persons' extracting and utilizing a substantial part of the database permanently.
	Newspaper, periodical	Unless there would exist exceptions for government data as well as provisions of fair use for science and education and forbidding the limitations on rights to be overridden by contract in domestic legislation, the draft treaty would protect any kind of materials contained in any kind of newspapers or periodicals. The database maker could make these materials profitable forever. Much factual information not protected by copyright legislation would never come into the public domain.
	National secrets and archives	Related works would have to be published many years after their creation. Although State agencies hold the copyright of most works, the same profitable databases as Tongfang or Yinghua would be more attractive. When State agencies consign them to a private person, the permanent protection provided by the draft treaty would make related documents an inexhaustible goldmine.
	Other works	These works, together with afore-mentioned works, are not subject to explicit provisions of subject matter exception, fair use, statutory license and compulsory license. Since any substantial change to the database, evaluated qualitatively or quantitatively, including any substantial change resulting from the accumulation of successive additions, deletions, verifications, modifications, in organization or presentation, other alterations, which constitutes a new substantial investment, shall qualify the database resulting from such investment for its own term of protection, many of these works contained in the database would never come into the public domain.

[60] See: Article 5 (11) of the Regulations for the Implementation of the Copyright Law of the People's Republic of China (1991). Compilation is the creation of a work by assembling a number of selected pre-existing works in whole or in parts, according to an arrangement designed for a specific purpose.

Materials not protected by the Copyright Law of 1990	Works the publication or distribution of which is prohibited by law	Databases providing erotic images, devastating computer programs and so on should not be protected by new legislation, or many other existing legislation would have to be amended.
	National secrets and archives	Upon disclosure by administrative orders or automatical disclosure in accordance with relevant conditions, only archives of various levels could select and assemble related materials. Therefore database makers of related materials are mostly State agencies. Although there might be exception provisions concerning "government data," State agencies could privatize these valuable databases by consigning them to private companies who would then include them in their privately owned larger databases.
	Personal data	The market of personal data is developing very rapidly. Since strict protection provided by the draft treaty would make the database industry more profitable, more genic databases, medical databases, customer databases and so on would be produced, traded, searched and utilized. Internal self-disciplined administrative protection provided by various units and civil right protection provided by statute, as well as reply and interpretation of the Supreme People's Court are very fragile.
	Materials provided in article 5 of the Copyright Law[61]	Independent data collection usually costs much more time and money. Sometimes the database maker is the producer or controller of related information. These materials could be assembled into databases before or soon after they come into the public domain. Since it would be impossible or difficult for end users to obtain related materials, the database maker could profit from them permanently.

(e) What could be the influence of the draft treaty on China's scientific and technical research and education?

According to the draft treaty, scientists and other users would have to conform to both copyright (which protects works with originality) and database protection (which protects the facts themselves). The maker of a database eligible for protection under this treaty shall have the right to authorize or prohibit the extraction or utilization of its contents. Extraction is defined as "the permanent or temporary transfer of all or a substantial part of the contents of a database to another medium by any means or in any form." Utilization is defined as "making available to the public all or a substantial part of the contents of a database by any means, including by the distribution of copies, by renting, or by on-line or other forms of transmission," including the right to control the use of data "at a time individually chosen by each member of the public." In fact the extraction and utilization rights granted to database makers are distinctly different from monopolizing rights granted to copyright holders.

[61] According to Article 5 of *Copyright Law*, copyright protection shall also not be applicable to: (1) laws, regulations, resolutions, decisions and orders of State agencies, other documents of legislative, administrative and judicial nature, and their official translations; (2) news on current affairs; (3) calendars, numerical tables, forms of general use and formulas.

Copyright legislation just protect original works of authorship. The draft treaty would establish a pay-per-use system for any kind of information included in a database. The system should be effective when a substantial part of a database is extracted or utilized. The "substantiality" of a portion of a database is assessed against the "value of the database" and "qualitative and quantitative aspects" are to be considered. The substantial part might be any portion of the database, including an accumulation of small portions, that is of qualitative or quantitative significance to the value of the database.

Adopting similar treaties or enacting similar legislation in China would have the following results:

Pay-per-use system: increased information transaction cost

As discussed earlier, academic resources of online databases are searched, browsed and used much more frequently than other databases. In fact, the academic activity is very censorious. Although SSreader and Tongfang have produced voluminous databases, users would just search and browse them in a sporadical way and use a very small portion of the information contained therein. Although some end users could not obtain information from other sources, they would not bother to use the voluminous database any more. That means a highly priced database might be valued very low by most end users. Therefore most end users would prefer paying very little for the right of access to an expensive voluminous database. The CD versions of most academic databases are too expensive, which makes online databases more attractive. Because most online academic databases are also very expensive, colleges, research institutes or similar institutions have bought them for their own staff and provided them with free access as authorized end users of their LANs. According to the treaty, other users not belonging to the said institutions would be prohibited from entering databases bought by the said institutions, because unauthorized access might lead to temporary or permanent transfer of a substantial part of the contents of a database to another medium. Since the treaty intends to "include strong civil and criminal penalties, including provisions for third-party liability (e.g., liability incurred by the unwitting intermediary or disseminator),"[62] the said institutions would have to try hard to prevent any other users from riding on the databases for free. Authorized end users would also be prohibited from providing a copy of a substantial part of a database to the said other users. In fact, most online databases could hardly charge those other users who do not have free access provided by the LANs, unless they set up a pay-per-use system. In China, most online databases have not adopted this system. For example *263.com* has created the largest match-making database in China providing online dating service. Everyone, mostly singles, could pay 300 or 500 *yuan* and have access to the said database looking for love, romance, friendship or a lifelong partner. *ChinaHR* has set up the largest database of online job-hunting in China. Its prices of database service are listed in the following table.

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62 Comments of The Electronic Frontier Foundation *http://www.public-domain.org/database/eff.html*, *http://arl.cni.org/info/frn/copy/data.html* National Academy of Sciences Letter with regard to The Database Proposal

Table XV: Price for accessing the online databases of job-hunting

Service for members	Description	Price (*yuan*/month; quarter; year)
Querying Resumes (Q)	Search the database of resumes and contact with the job seeker directly	990; 2,000; 3,000
Releasing posts in the database (R)	Add information on the post to the database	200; 500; 1,500
Q&R	Search the database for resumes and contact with the job seeker directly; add information on the post to the database	1,000; 2,500; 4,000

Most academic websites have launched online databases to make money through similar means. For example, the databases of Tongfang and Yinghua could be accessed, if the above mentioned other users have registered online and paid the pre-determined royalties for free access of a certain period of time. Databases of the National Digital Library and SSreader Digital Library haven't adopted the pay-per-use system. For example, the latter "reprints" pre-published materials and publishes non-published materials on the Internet. End users could purchase a single card and obtain the authorization of accessing all databases. *Bookoo*, different from the said websites, has adopted this system. It is the largest e-book publisher and distributor in China. Currently BOOKOO focuses on publishing and distributing e-books, providing books and publishing information online, building Internet publishing applications and developing marketing services for its partners. BOOKOO owns the largest group of Chinese e-book readers in Asia and North America. It has acquired almost 80% of the Chinese best-sellers, including works by authors such as Wang Shuo, Jia Pingao, Chi Li, Fang Fang, and Er Yuehe. "BOOKOO already owns copyrights in thousands of electronic books. BOOKOO is the preeminent company in this field, and the *dominant force* in China (quoted from *http://www.bookoo.com.cn/help/ensev.asp*)." Internet users could finish *online payment* in a few seconds and download its electronic books at any time of the following 30 days.

Bookoo usually obtains an exclusive right to use the electronic works in less than 10 years from copyright holders, who receive a pre-determined remuneration and royalties changeable according to the frequency of the works being downloaded.

This system seems rather fair, since end users just pay for what they download. It applies to the transfer of expensive items in a single purchase. As far as large academic databases are concerned, this system is of no efficiency.

Table XVI: Transaction costs of pay-per-use system in respect of online academic databases

Process	Activity	Royalty	Transaction costs			
			Identity verification	Payment	Database makers' recording and controlling activities of extraction and utilization	Supervision by a third party: ensuring transaction safety
Search	Download an index of related materials or a list of their summaries	A small fixed access fee	High[63]	High[64]	None	None
Browse	Download contents of many items and browse them on the webpages	High[65]	High[66]	High	High	High
Select	Select useful contents	None	None	None	None	None
Copy	Reproduce some materials on another medium permanently	None	None	None	None	None
Select	Select pertinent materials and analyze them elaborately	None	None	None	None	None
Utilize	Profitable use: reprinting, excerption, adaptation or derivation	None	None	None	None	None

[63] All websites need identity verification. Users have to fill in many forms.

[64] Users have to fill in many forms.

[65] All items are downloaded against payment of a fee, since temporary reproduction of cumulative small portions constitutes "extraction."

[66] Many purchases happened. All websites need identity verification.

	Non-profitable adaptation, derivation, or operation without damage to databases' market value	None. However, when derivative materials are transmitted, royalty is needed.	None	None	None[67]	None
	Uncontrollable and usually innocuous transmission	Comparing with extraction fee aforesaid, utilization fee is small.	Very high[68]	High[69]	High[70]	High[71]

According to Table XVI, so many databases of different holders are searched and so many separate items are downloaded or reproduced that to keep a record of and carry out these transactions would be of no efficiency. Otherwise the pay-per-use system as would be encouraged by the draft treaty would uphold the vendors' assertion that any transmission of a database element on the Internet is an infringement if the company concerned has a mechanism or aspirations to charge for the transmission. Therefore cumulative impact of many small inefficient transactions in respect of utilization rights would diminish the value of online database service.

Limiting the non-profitable activities of most individuals: individuals instead of institutions would be obliged to pay more

Since most students, scholars or technical service providers of China often exchange information with one another and academic cooperation is very popular in their institutions, other users not belonging to the said institutions can also have direct access to the databases of these institutions or obtain materials contained therein from friends who are authorized users of the said institutions. This phenomenon of free riding is very popular in China. Therefore factual information or unauthorized copyrighted materials of databases, together with greetings and academic discussions are flowing freely on the Internet. According to the draft treaty, the said institutions would be deterred from letting the said other users riding on

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67 It is impossible to monitor this kind of activities.

68 Users usually do not know what kind of transmission should assume a royalty. When adaptation, derivation, or operation is involved, it is often assumed that there exists no legal limitation. Therefore it is very expensive for the database makers to pursue potential infringers.

69 Both private negotiation and judicial adjudication for determining disputed utilization fees are very expensive.

70 Database makers would be obliged to have recourse to ISPs. Article 7 (Right of Information): Contracting Parties may provide that the judicial authorities shall have the authority, unless this would be out of proportion to the seriousness of the infringement, to order the infringer to inform the right holder of the identity of third persons involved in the production and distribution of the infringing goods or services and of their channels of distribution.

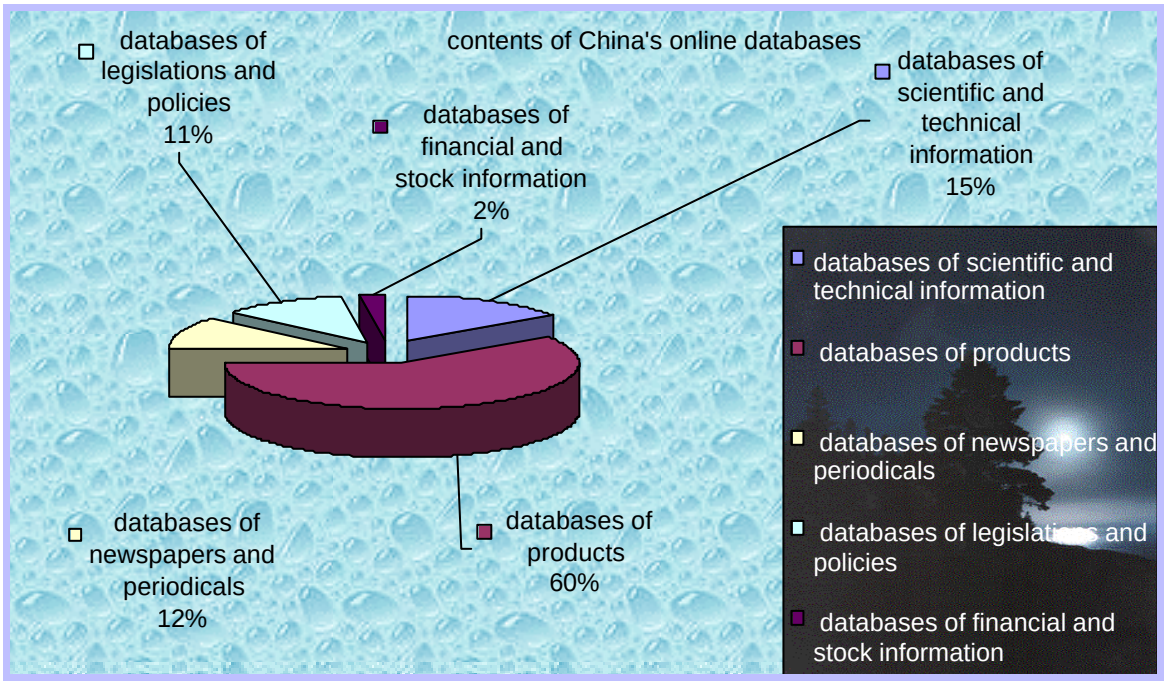
71 Arbitration of the third party and monitoring measures adopted by ISPs are both expensive.

their databases for free. Authorized end users would also be prohibited or deterred from providing a copy of a substantial part or cumulative small portions of a database to the said other users. If this is the case, more and more end users not belonging to certain LANs would have to pay royalties for accessing the related databases.

Always have to pay for facts: freedom of speech and thought would be seriously restricted

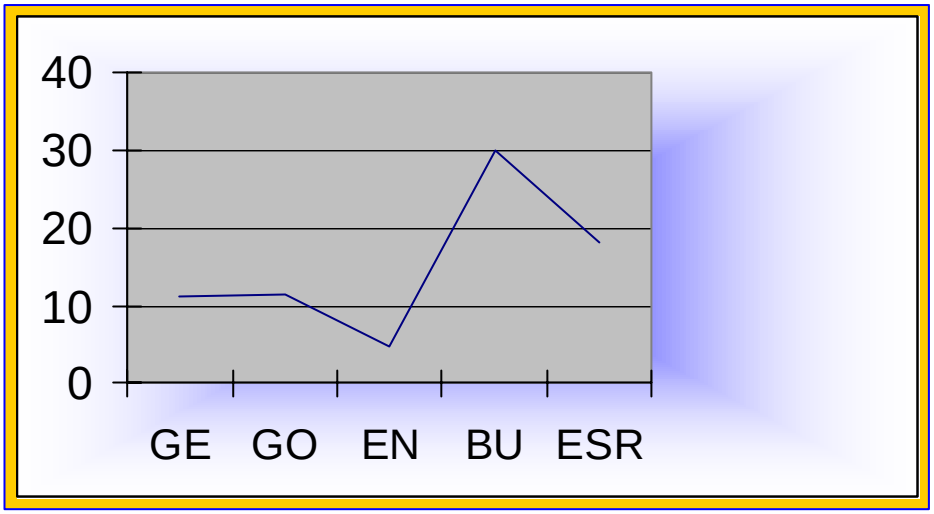
At present, the total number of online databases in China is 45,598, about 15.4% of which are databases containing scientific and technical information (S). The related percentages of products (P), newspapers and periodicals (N), policies and legislation (L), financial and stock information (F&L) is 59.6%, 11.5%, 11.2%, 2.3%, respectively. Although S has the second largest number of online databases, it has the largest number of bytes per database. Since databases of newspapers and periodicals are usually used in scientific and technical research and education, the total number of databases usually accessed by students, scholars and technical service providers in academic activities accounts for about 27% in all the databases in China. News, scientific and technical data without originality, as well as academic materials of which copyright protection terms have expired are usually flowing freely on the Internet. Very few databases charge fees for accessing these factual information. As a matter of fact, most online databases are being operated for free. Figure IV brings forward an related description.

Figure I: Contents of China's Online Databases[72]



[72] *http://www.cnnic.gov.cn/tj/2.shtml#2.1.4*

Figure II: Percentage of Websites that Charge an Access Fee



In China, the total number of websites is 238,249. About 3.3% of them are websites of scientific and technical research and education. Generally 11.3% of all websites (GE) charge an fee for accessing their databases. The related percentage of government websites (GO), enterprise websites (EN) and business websites (BU) is 11.2%, 11.5%, 4.7%, 29.9% respectively. About 18.2% of all websites of scientific and technical research and education is charging the similar fee. Most of them, just like national digital library, SSreader digital library, "Home of Students," Tongfang and Yinghua, charge a fee for a specific period of free access. More than 80% of all this kind of websites are completely free of charge.

Under the *Constitution of the People's Republic China*,[73] freedom of speech is protected. To protect this freedom, citizens of China should be able to express and transmit most facts without restriction. If this expression and transmission should assume some kind of royalty, no one could enjoy this freedom. Therefore the free expression of facts should be protected under the Constitution. However, the draft treaty protects factual information.[74] The subject matter here is any database representing a substantial investment in the collection, assembly, verification, organization or presentation of the contents of the database. Therefore it includes collections of literary, musical or audiovisual works or any other kind of works, or collections of other materials such as texts, sound, images, numbers, facts or data representing any other matter or substance, as well as collections of expressions of folklore. The protection shall be granted to databases irrespective of their form or medium in which they are embodied. Protection is extend to databases in both electronic and non-electronic forms and embraces all forms of media known now or developed later. Protection shall be granted to databases regardless of whether they are made available to the public or not. "This means that

[73] Article 35: Citizens of the People's Republic of China enjoy freedom of speech, of the press, of assembly, of association, of procession and of demonstration.

[74] (1) Contracting Parties shall protect any database that represents a substantial investment in the collection, assembly, verification, organization or presentation of the contents of the database.
(2) The legal protection set forth in this Treaty extends to a database regardless of the form or medium in which the database is embodied, and regardless of whether or not the database is made available to the public.
(3) The protection granted under this Treaty shall be provided irrespective of any protection provided for a database or its contents by copyright or by other rights granted by Contracting Parties in their national legislation.

databases that are made generally available to the public, commercially or otherwise, as well as the public databases that remain within the exclusive possession and control of their developers enjoy protection on the same footing."[75] Since the draft treaty would prohibit free expression of much factual information assembled in databases and could not be obtained by the public from other independent sources conveniently,[76] there would be obvious clash between the draft treaty and the freedom of speech. As more and more databases and websites would charge a fee for "extracting" or "utilizing" factual information, the freedom of speech would be restricted seriously.

Less further compilation and less free flow of information: end users would need more time and license fees to obtain useful information

Although China has millions of electronic databases of all kinds, about 70% of them are those containing just secondary materials, which are composed of indexes or summaries of other first-handed materials. More independent collection of first-handed materials is significant for the development of China's database industry. The draft treaty does not preclude any person from independently collecting, assembling or compiling works, data or materials from any source other than from a protected database. However, in some circumstances, independent collecting is not practical. For example, Article 8 of the National Secret Protection Law (1989), Article 7 of the *Regulations for Protecting Secrets of Science and Technology* (1995), Article 19 of the Amendment of National Archives Law (1996) award certain State agencies the advantage of prior appropriating much information. According to such legislation, upon disclosure by administrative orders or automatical disclosure in accordance with relevant conditions, only State archives of various levels could select and assemble related materials. Therefore database makers of such related materials are mostly State agencies. Although there might exist exception provisions concerning "government data", State agencies could privatize these valuable databases by consigning them to private companies who would then include them in their privately owned larger databases. Before the publication of related databases, most data are controlled by a single institution and are prohibited from being disclosed, reproduced and transmitted. Therefore after the publication of the related databases, no other sources of information could be used for independent collection.[77] According to the draft treaty, further compilation resulting from

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75 James Love, Consumer Project on Technology A Primer on the Proposed WIPO Treaty on Database Extraction Rights that Will be Considered in December 1996. *http://www.cptech.org/ip/cpt-dbcom.html*

76 In the United States of America (U.S.), "the private property rights granted by Copyright Law are made compatible with First Amendment protections of freedom of speech and press through two concepts: the "'fact-expression'" doctrine, which permits free use of any facts contained within a work of authorship (see Harper & Row Publishers, Inc. v. Nation Enterprises, 471 U.S. 539, 556 (1985)); and the fair use doctrine, which allows even protected expression to be taken in certain circumstances. In contrast, the Proposed Treaty contains neither of these limitations. It would permit nearly unlimited protection for facts (as long as these are arranged in a 'database') and contains no exception for such socially desirable uses of factual information as comment, criticism, news reporting, or research." STATS, Inc. Comments on the WIPO Database Treaty and Sports Statistics SPORTS TEAM ANALYSIS AND TRACKING SYSTEMS, INC. November 22, 1996 *http://www.public-domain.org/database/stats.html*

77 According to the Copyright Law of 1990, materials without originality could be compiled by anybody and the compilation is not copyrightable.

extraction or utilization of the said databases would constitute infringement. Therefore there would be less further compilation if China adopts the draft treaty.

Databases of Tongfang and Yinghua have been "pirated"[78] by many websites and individuals. No one could tell whether strict protection of databases would contribute to the economic success of database makers, since most of the said piracies have not brought direct economic interests to the party responsible for the infringement, who just publish these pirated materials on their rarely visited homepages or websites for free access. None of them has made profits by pirating other persons' materials. The strict protection provided by the draft treaty would deter some of them from so doing. "First, it is unlikely that any data worth extracting will be deemed insubstantial;[79] second, the treaty states that serial extractions of insubstantial parts of a database may be considered substantial in combination; and third, unlike the European Union (EU) Database Directive, the treaty makes even the privilege of insubstantial extraction waivable thus encouraging vendors to 'contract out' of this limitation."[80] Although a few kinds of extraction would be deemed insubstantial, there are no other explicit exceptions or limitations of a broader scope. For example the monopolizing rights of database makers would not be subject to the "fair use doctrine."[81] Although copyrighted works would also be subject to the doctrine,[82] materials without originality or whose copyright protection term has expired would be excluded from such exemption. Since most databases would include both kinds of materials, the discrimination of different protection would be difficult in practice. Otherwise, the lack of inclusion of any exemptions for libraries, research, and education in the draft treaty "supports an extremely bleak view of

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78 Some materials are only protected under the proposed draft treaty. For the time being, they could be reproduced or transmitted free of charge.

79 The draft treaty would award materials traditionally in the public domain more favorable protection than copyrighted materials.

80 Some Public Interest Considerations Relating to H.R. 3531 Database Investment and Intellectual Property Antipiracy Act of 1996, Peter Jaszi, Professor of Law, Washington College of Law, American University *http://arl.cni.org/info/frn/copy/peter.html*. Although this article is criticizing a similar legislation of the U.S., it 'is useful for the analysis of the draft treaty.

81 Exceptions provided in Article 5 are: (1) Contracting Parties may, in their national legislation, provide exceptions to or limitations of the rights provided in this Treaty in certain special cases that do not conflict with the normal exploitation of the database and do not unreasonably prejudice the legitimate interests of the rightholder.
Notes on Article 5: 5.01 According to paragraph (1), Contracting Parties may provide, in their national legislation, exceptions to or limitations of the rights provided in this Treaty. This freedom is limited by the criteria originally introduced in Article 9(2) of the Berne Convention. First, the criteria permit exceptions only in certain special cases. Second, the exceptions may never conflict with normal exploitation of the database, and third, the exceptions may not unreasonably impair or prejudice the legitimate interests, including economic interests, of the rightholder. The provisions of paragraph (1) allow limitations on the rights of both extraction and utilization.
5.03 The rights and exceptions in the proposed Treaty are norms for minimum protection. Article 5 does not preclude national legislation that imposes stricter or narrower rules in respect of exceptions. For example, a Contracting Party may enact national legislation that excludes any limitation of the right to extract the contents of a database in electronic form for private purposes. <*http://www.wipo.org/eng/diplconf/6dc_pre.htm*>.

82 It provides that nothing in this Treaty shall derogate from existing obligations that Contracting Parties may have to each other under treaties in the field of intellectual property, and in particular, that nothing in this Treaty shall in any way prejudice the rights granted to authors in the Berne Convention for the Protection of Literary and Artistic Works.

how members of the academic and research community and the public will access information resources in the future."[83] As far as databases made by governmental entities or their agents or employees are concerned,[84] although there would be provisions of exception or limitation, the makers could privatize these valuable databases by consigning them to private companies who would then include them in their privately owned larger databases. Since much reproduction or transmission would be prohibited or automatically given up due to the unfavorable results anticipated, less information would be freely flowing on the Internet. End users would spend more time on searching information. Otherwise more license fees are needed. This would lead to some real troubles.

China's college education is very expensive comparing with its per capita GDP. In Figure III, the per capita GDP of Canada, the United States of America (U.S.), Poland, Mexico and China in the year of 1999 is 23,671, 29,326, 7,487, 7,697 and 780 US dollars, respectively. Although China's per capita GDP is very low and most of its colleges are public funded,[85] the national average annual college costs of China is comparatively very high. For example, in the year of 2000, tuition and mandatory fees (T&M), costs of room and board (R&B) and total costs (T) of American public colleges are 3,510, 4,960 and 8,470, respectively, while per capita GDP of the U.S. is 29,326 US dollars. However, the corresponding numbers of China are about 600, 20, 620 and 780 respectively. In the U.S., the total costs of public colleges are just about 28% of its per capita GDP. In China, the corresponding number is about 94%. Therefore Chinese students would have much less money to pay for the said license fees.[86]

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83 See the former reference.

84 Article 5 (2): It shall be a matter for the national legislation of Contracting Parties to determine the protection that shall be granted to databases made by governmental entities or their agents or employees.
Notes on Article 5: 5.02 Paragraph (2) sets forth a specific rule permitting national legislation to determine whether and how to protect databases made by governmental entities, their agents and employees.

85 In 1999, the total number of all kinds of students in various colleges of China in 1999 is 7,423,000. The number of students in private colleges is just 1,184,000. Most private colleges award no formal certificates that are very important for students in a very credentialism society of China. The existing 1,240 private colleges are also very small and do little scientific and technical research. For example, all postgraduates are studying in public colleges of China:

Postgraduate	Undergraduates	students in colleges	students in colleges for adult	Total
234	7,189	4,134	3,055	7,423

Source: 2000 Blue Paper of China Education, Studying Center of National Education Development

86 The practical version of "China Law Retrieval System" for individuals is 2,880 *yuan* (about half of China's per capita GDP). Since the second year, another 900 *yuan* should be paid annually (about one seventh of China's per capita GDP).

Figure III: GDP per capita of 1999(US dollars)[87]

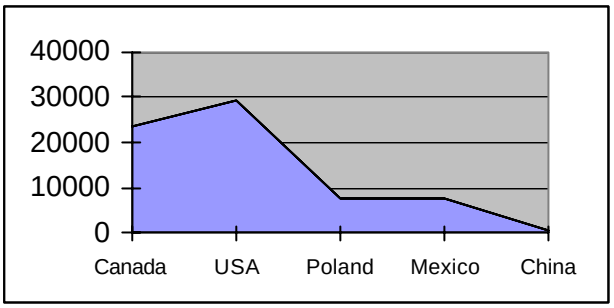


Figure IV: National Average Annual College Costs of the U.S. in Public Colleges (1999)

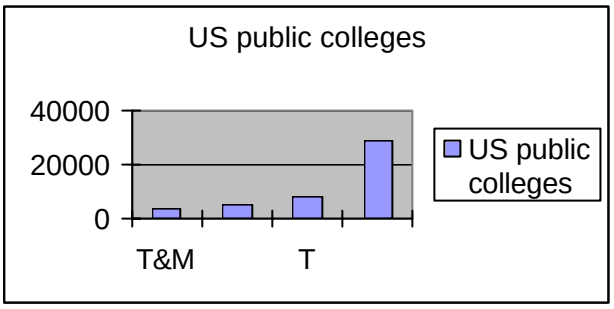
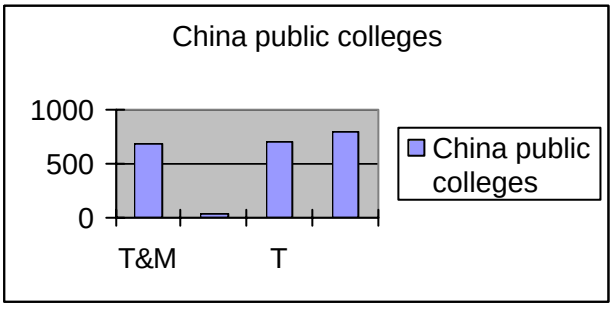


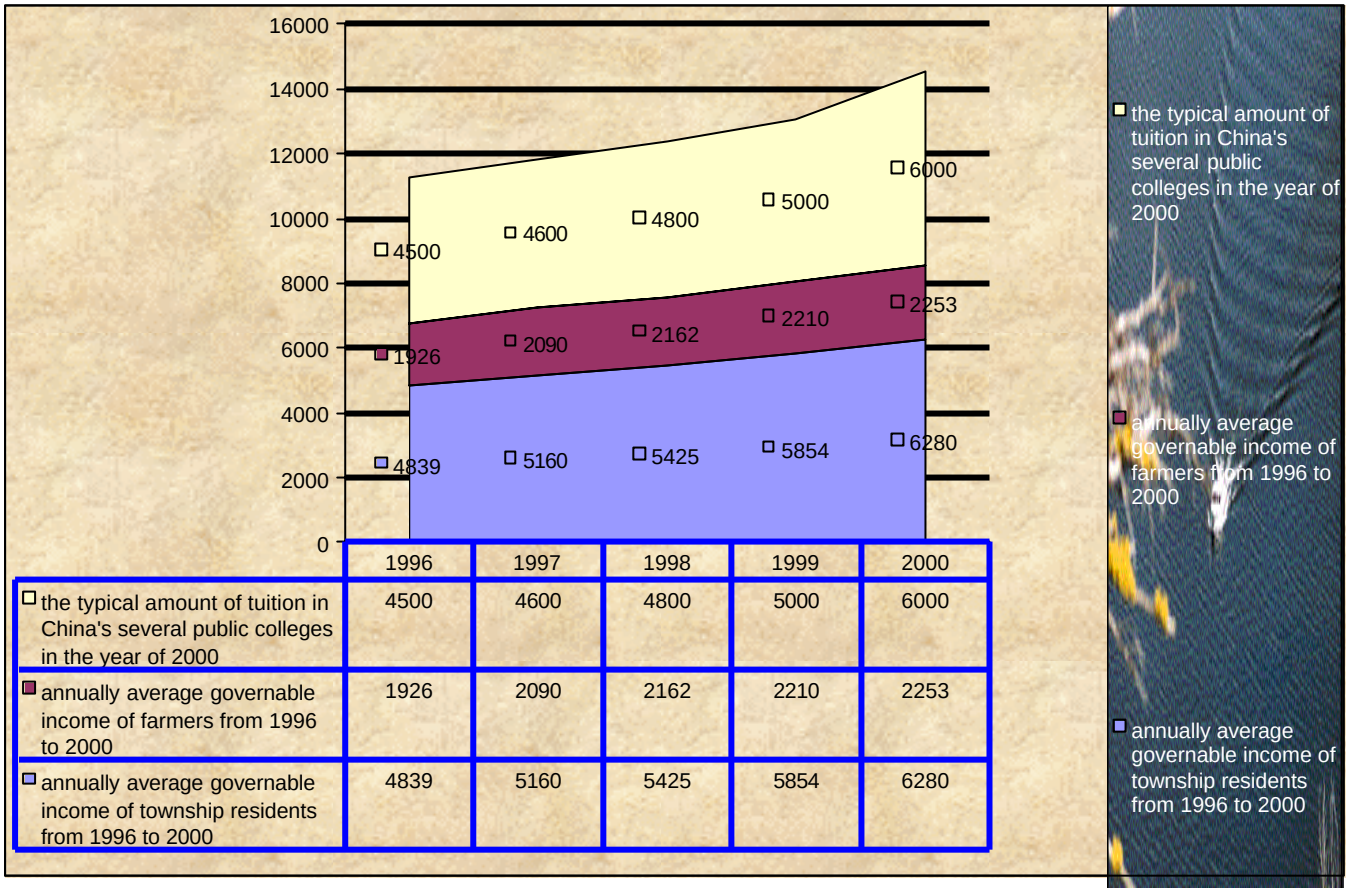
Figure V: National Average Annual College Costs of China in Public Colleges[88] (1999)



87 *http://www.econweb.com/MacroWelcome/growth/notes.html*

88 *http://dailynews.sina.com.cn/china/1999-9-27/17939.html*

Figure VI: Comparison of College Tuition and Annually Average Governable Incomes



	1996	1997	1998	1999	2000
the typical amount of tuition in China's several public colleges in the year of 2000	4500	4600	4800	5000	6000
annually average governable income of farmers from 1996 to 2000	1926	2090	2162	2210	2253
annually average governable income of township residents from 1996 to 2000	4839	5160	5425	5854	6280

On the other hand, the income of educators and technical service providers is very low. In Table XVII, the statistics of the Ministry of Labor and Social Security implies that in the fourteen largest cities of China, the average earnings of educators and technical service providers in October 1997 and 1998 are both lower than the average level of these cities. According to a survey sponsored by the Beijing Business Information Consultation Co. and the Beijing Industry University, the average monthly income of teachers in most Beijing colleges is only 1,321 *yuan*, not more than 165 US dollars. The price of Window98 on sale is 2,998 *yuan*, so most teachers would have to spend two months' income on just one authorized copy of this operating system. So does the practical version of the "China Law Retrieval System" designed for individuals. After installing the essential operating system and a single database rarely searched, they would have lost one third of a whole year's income. This would be incredible in developed countries. The income of scholars and technical service providers is so low that 30.9% of the informants said they would like to change jobs in the future. In fact most scholars are very diligent and devoted to scientific and technical research. Most of them would like to utilize cost-free information resources provided by the nation and their colleges or institutes in a most efficient way. Freely accessible online databases on their LANs have done them a great favor. They do not have to pay extra fees incurred by a database legislation. According to Table XVIII, if an individual hopes to access the databases of CAJ that include articles from 1994 to 2001, he would have to pay 132,840 *yuan* or 35,140 *yuan*, which few people could afford.

Table XVII: Fourteen largest cities' Average Monthly Earning (*yuan*)[89]

Earning Occupation	Average Earning of October,1997	Average Earning of October,1998
Education	698.5	742.3
Scientific research and general technical service	587.3	606.5
Agencies organizations	770.0	821.6
These cities' average total	862.0	943.3

Table XVIII: Prices of Tongfang's CAJ Databases that Individuals could Buy their CD versions or remote login (*yuan*)

Products	CD				Remote login
Database	94-96	97-99	2000	2001	2001
Science and engineering(A)	8,000	20,340	7,740	8,200	11,720
Science and engineering (B)	8,000	20,340	7,740	8,200	11,690
Science and engineering (C)	8,000	20,340	7,740	8,200	11,730
Total	24,000	61,020	23,220	24,600	35,140
Total	132,840				35,140

89 *http://www.molss.gov.cn/column/index_p2.htm*

V. THE ISSUES CONFRONTING THE CONSTRUCTION OF DIGITAL LIBRARIES IN CHINA

(a) Introduction

The Chinese name *"Shu Zi Tu Shu Guan"* comes from the word-to-word translation from the English words "Digital Library", which some experts believe it better to translate into *"Zi Liao Ku"*, meaning information base,[90] a "gigantic base of information."[91] Taking China's Digital Library as an example, it includes: resource databases in the following fields Chinese cultural history, the history of the Chinese Communist Party, the Peoples' Republic of China, knowledge innovation and strategy of vitalizing the country with education and science, Chinese legal system, the national conditions of China, the Chinese education, China's folklore, the storing treasure by Chinese Library, Chinese religion, Chinese medicine, contemporary celebrities of China, Chinese tourism, Chinese art, knowledge treasure, technology, Chinese software, and so on. They constitute the blueprint of China's Digital Library, and in the course of actual construction, even more information databases will be involved. So we can conclude that any of the existing Chinese information in this real world could become the "acquisition" of this library. And it will be a gigantic, open and searchable information database.

The digital library itself is a set of system of information and technology, which are generally four-fold: first it transforms information in its traditional forms into digitized information; second it stores and administers the digital information by means of electronic technology; third it has very handy technology of accessing and searching; and lastly, it realizes alternating access.[92]

The word "digital" in "digital library" would make it possible to be provided on-line, be highly efficient, in multimedia forms, with massive information for reading, searching and copying. While people combine digital technologies with library, copyright licensing becomes a focus of attention. The very few advantages of "fair use", formerly enjoyed by the library, are placed with more restrictions. There are conflicts between copyright holders, the general public and digital libraries in respect of information use. But on the other hand, information technology provided a convenient means for information capture, which is sometimes even automatic. Thus, supposing that capture without permission is not banned by law, the owner of the digital library would be seriously harmed.

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90 Gao Wen, Liu Feng, Huang Tie jun, *Theory and Technology Realization of Digital Library*, Tsinghua University publishing company, September 2000, pp. 2.

91 Former Vice Minister of Culture, Xu Wenbo's Presentation at the "Seminar on the Report of the Taskforce on Legal Issues under the Working Group on the Development Strategy of the project of the China's Digital Library."

92 Gu Yue, *Digital Library: Not So Far*, Science and Technology Daily, September 4, 1996, section 6.

(b) Legal issues on the sources of works

There are now a lot of websites specialized on books, with various names, such as libraries, bookstores, book cities and book academies. From the investigation of this paper on the digital libraries, very few of them contain standard copyright statements. Most websites have just one simple sentence on their homepages: "All rights reserved", or otherwise sentences like: "The copyright of the up-loaded works belongs to the author. Please contact this website if you have any objection. We will delete the works at once from the website at the request of the author." Some websites indicate that "the website is the result of personal collection, so the copyright of the works belongs to the authors and publishing houses. The works can not be used for commercial purposes. Please send us mails if you have comments." These websites thus list themselves as fair users of others' works. Other websites know perfectly well of the problems of copyright if no direct authorization is given by the authors. So, in order to make up, they count the on-line reading numbers by their own browsers, and pay the authors through copyright protection centers a fee calculated on the basis of numbers of hits. This can only solve the problem of payment of fees, but can not solve the problem of authorization or licensing. Only a few websites have put on a proper copyright statement. Some even have a special copyright page. They collect works with the authorization of authors, and pay them back in accordance with the terms of the agreement concluded for this purpose. But these websites contain a limited amount of information, incomparable with the those websites that simply "take and use" whatever they want. Most digital libraries of universities are only able to provide searching services, with a few providing content services, because it is no simple thing to obtain the authors' authorization. The reason for this is that there is no straightway channel for giving authorization, which has nothing to do with the willingness or unwillingness of the authors to give authorization.

Only providing services concerning tables of index and summery but the possibilities of "reading" the contents to readers cannot meet, in a satisfactory way, the needs of the readers who visit the libraries. Under such circumstances, a "digital library" cannot be considered as a library in its true sense, and it is sarcastic to the qualities of the Internet as being "quick, highly efficient, containing massive information, providing interactive services" on which digital libraries rely.

(c) The legal status of the digital library

From the name of "digital library", it seems that libraries of this kind should enjoy rights and bear obligations in the same way as traditional libraries under the Copyright Law. However, digital libraries are different from traditional ones in both their functions and ways of representation, as the former is a combination of public welfare service with commercial service, "bookstore" service with library service, ICP service with Internet access provider (IAP) service, "textual" service with "multi-media" service.

The multiple roles that digital libraries assume require a differentiating analysis from different facets in our discussions of the issue of copyright protection. When "collecting works" and "providing content services", digital libraries can be categorized as disseminators of works, so it is appropriate to see them as ICPs for the purpose of copyright protection. Accordingly, digital libraries enjoy a reproduction right permitted by law of some works in accordance with the *Opinions of the People's Supreme Court on the Interpretation of Several Problems in the Application of Law to Cases concerning Computer and Internet Copyright Dispute*. That means that digital libraries can reprint and excerpt works published in

newspapers, publications and the Internet (except that right holders expressly state otherwise). In the case of infringement of copyright, one can only apply the principle of direct and deliberate fault liability. Therefore, digital libraries need not examine whether their reproduction of such works would infringe anyone's copyright, and would examine and decide whether to delete the relevant documents only when a notice is received from the copyright holders.

Under this judicial interpretation, seeing digital libraries as ICPs can only solve part of the problem in respect of the licensing of works. Digital libraries need to collect a gigantic mass of data, so they have a gigantic mass of licenses to obtain if they want to use the works.

To some extent, many copyright related problems in the cyberspace are dealt with in some developed countries. But there are still some new issues, such as how to determine the quantity and the price of the works to be copied on the Internet, how to deal with the copyright problems of certain multi-media works. It is more difficult for us in China to deal with such problems due to the lack of a sound system for royalty collection. At present, there is only one royalty collecting society in China, the Music Copyright Society of China (MCSC). There are no such professional societies for literary works, works of fine art, audio-visual works, computer software, etc.. The China Copyright Protection Center, established in February 1998, is responsible for copyright representation, copyright collective administration, collection and transferring of remuneration and so on, but has made no specific regulations on the management of works in different forms.

No matter how perfect the system of royalty collecting societies may be, these societies can only collect the remuneration and transfer it under statutory licenses to those who are member of the system. If a copyright holder is not a member of such societies, the system of collective licensing can do nothing. When no one in the world can take effective measures to protect copyright on the Internet, do we have to think whether the problem lies with the system itself. If a right is not recognized by the general public, it remains a nominal right only. That is to say, if a code renders the majority of people illegal, this is not a code that can serve the society as a whole. When an inappropriate right is conferred by the Copyright Law, it will neither bring better protection to copyright holders, nor is it considered efficient for the whole society. One should then make appropriate adjustment to the legal system.

(d) The use of digital library and the legitimate rights of the owner

When launching a digital library, the owner should respect the copyright of other people and avoid infringement. Once the digital library is in place, the owner should mind his own rights and prevent infringement from taking place. The use by other people of the resources of the digital library should be monitored by relevant technology measures concerning, among other things, exchanging of information, electronic publishing and fair use. The administration will be mainly through a series of right announcements and licensing contracts, which correspond to the dual roles of the digital library providing both services of a public welfare nature and paid services.

Protection by contractual means now stands as an effective way for the operation of the digital library. The contracts most frequently adopted by digital libraries are those standardized ones that target different clients, for different purposes, in different times and areas, and with different bounds of rights.

The digital library is actually a huge database. According to the services it provides and its legal status, digital library owners should be classified as database producers. So due rights should be accorded, *mutatis mutandis*, to them in accordance with the legal protection of databases. Unauthorized extraction of parts from the digital library for commercial use would constitute unfair competition. If the database, as a whole, meets the requirements of compiled works within the meaning of copyright laws, it can be then protected by the copyright law.

The copyright problems that confront digital libraries are universal in the cyberspace. Both developed and developing countries should consider ways and means to adapt their laws to the situations and provide for the effective protection for digital libraries.

VI. IMPACT OF A *SUI GENERIS* PROTECTION OF DATABASES ON THE DISCLOSURE OF GOVERNMENT INFORMATION

(a) Exemption of Government data

The term "database" is so broadly defined as to include collections of facts and information in any format, whether print or electronic. Thus, all sorts of compilations of data or datasets that have traditionally been in the public domain for lack of sufficient "originality" (to make them copyrightable) could now be protected against unauthorized uses. Legislation is intended to protect the property rights of owners of databases. The draft WIPO treaty on databases would allow participating countries to provide for exceptions and limitations, for public interests, in their implementing legislation. Key exceptions concern the use of government-produced data. Article 5 of the WIPO database treaty would permit signatory nations to implement national legislation, such as was proposed in H.R. 3531, the "Database Investment and Intellectual Property Antipiracy Act of 1996," that could override public domain requirements currently in effect for Government information databases prepared by private sector contractors.

The European Union (EU) Database Directive was created to harmonize the intellectual property laws regarding databases of the 18 countries of the European Economic Area (EEA) by supplementing copyright law to protect databases produced by sweat of the brow. Member countries are permitted to designate exceptions and limitations in their implementing legislation, as long as the exceptions do not conflict with the normal exploitation of the database. In addition, many countries of the European Union have freedom of information acts, which provide for access to government data, but it is not clear whether they can be overridden by the Database Directive. Moreover, "freedom of information acts" would not include data collected or disseminated by state-owned companies operating under market conditions without a public service obligation.

In America, two database bills–HR 354 and HR 1858–are currently pending in the House of Representatives. Both bills contain exceptions for government data unless overridden by contract.

Thus, database legislation may be inevitable, but one principle for database legislation is that there must be exceptions for government data, but those prepared by private firms or persons using government generated or collected data could by covered.

Although the current status of database legislation gives a wide exemption of the government data, it is impossible for the government to disclose all the government data to the public.

(b) Range of Government Information

According to the Constitution of China, "government" means those authoritative organs and executive bodies, including the State Council and its affiliated ministries and commissions, local People's governments and executive agencies designated by them. This definition is supplemented by the administrative regulations, which add to the list such government-controlled or government-entrusted corporations as the Chinese Consumers Association and Trade Promotion Commission.

Therefore, government information should cover all information produced, obtained, disseminated, conserved, utilized, or disposed by those government agencies based on their responsibility or authority.

(c) What kind of information should be made available to the public?

The Freedom of Information Act (FOIA) and the Privacy Act of the United States are laws that generally establish the rights of the public to obtain information from agencies of the federal government. In China, there exists no particular law similar to the Freedom of Information Act to stipulate the range of the government information. But many special laws have relative provisions on the right of the citizens to get the necessary information from the government.

In China, citizens can access to a wide variety of government information: first of all, pursuant to the principle of publicity of administration, as stipulated in the Law on Administrative Review, one can get information on how the executive agencies operate, on their expenditure, their statistics and other information. Secondly, with their basic rights, as stipulated in the Constitution, and their information right in Article 8 of the Law on the Protection of Consumers Rights, citizens have the right to request for and receive government information relating to daily life and public interests, such as information on public health, environmental hazards, consumer product safety, government expenditure, labor relations, business decisions, taxation, history, foreign policy, national defense and the economy. Finally, according to the Law on the Protection of National Secrets and Article 10 of the Law on the Protection of Fair Competition, and the Law on the Protection of Scientific and Technological Secrets, information concerning national security, internal rules, business information, etc. should not be publicized.

(d) Impact of a *sui generis* protection of databases on the disclosure of Government information

A *sui generis* protection of databases would mean a *sui generis* intellectual property right for database makers, the result of which would have a significant impact on the dissemination of government information.

(i) Impact on Government information whose disclosure to the public is stipulated by law

In principle, with regard to the government information whose disclosure to the public is stipulated by law, the Government has the obligation to compile the information into database and make it available to the public. This would be an easy task, especially when it becomes so convenient to collect and transmit the information under its own control with modern technologies. The proposed database treaty would have little impact on the use of such data because if the user chooses not to get the information from databases, he can always obtain it directly from the Government.

(ii) Impact on Government information whose disclosure to the public is not stipulated by law

For information whose disclosure to the public is not stipulated by law, the Government has no obligation to make it available to the public, and may decide whether and to what extent to make it to the public. One of the reasons that the Government does not want to publicize its information may be the lack of money. This is the biggest problem facing all the countries in the world, especially developing countries such as China. Another reason is that there is no universal requests by the citizens. The Government will not publicize the information as a waste of social and financial resources. The Government has no motivations to publicize the information. The efficiency of the government information publicity is directly related to the benefits resulted from the publicizing. There are no direct incentives for the Government to make its information available to the public. For information that has little to do with the daily life of the public, or does not concern ordinary people, the Government generally is reluctant to use its financial and human resources to make it available to the public. But if databases are protected and database producers are accorded a *sui generis* intellectual property protection for their databases, they will be able to make profits from collecting and compiling information, be they government agencies or private companies. Driven by the profits and under the budgetary pressure, the Government may make use of the data they have collected or processed in the following possible ways:

To finance other entities to produce databases on the basis of the data collected by the government or collected by the entities themselves through market surveys or through other means. For example, the Government can cooperate with universities or institutions by financing them under the condition that the Government owns the right to the databases.

To sell the data they have collected or processed to private companies.

To cooperate with other entities through other means.

In the use of data in the above mentioned ways, the Government can conclude contracts with the other economic entities, in which the rights and obligations of the Government will be clearly established, often providing that the Government has the right to use the database freely. This in fact gives the government the right to have a contractual relationship with other private entities for the exploitation of government data.

– Positive Impact on the Disclosure of Government Information

In China, the different departments of the Government have controlled almost 80% of the social resources, with more than 3,000 databases. But these resources are not used in an effective way. This is partly because that the Government has a limited budget, and does not have the needed money to make its information available to the public. Another reason is that realization of benefits is closely connected with the forms with which government information is made public. With little benefits resulting from such endeavors, the Government is not motivated enough to make the information available to the public. As a result, users who are in need of such information would not be able to get it. A *sui generis* protection of databases would create the necessary market incentives for the transfer of public information into the hands of private companies, resulting in a more efficient use of government information. In other words, if private companies are accorded a *sui generis* protection for their databases based on government information, they would have increased incentives to buy from Government agencies information to make their own databases.

– Negative Impact on the Disclosure of Government Information

1. One of the most serious consequences will be the decrease of data entering the public domain. Driven by the profits and under budgetary pressure, the Government will be inclined to cooperate with private entities. As a result, the data which should have been publicized by the Government is now not accessible free of charge to the public. There will be less and less data in the public domain, and the information already in the public domain will be available to the public in a restrictive way.

2. The social costs to get government data will be increased. The protection provided for in the draft database protection treaty, will create a win-win situation for the Government agencies and database producers. The agencies will have less budgetary pressure if they can shift their responsibilities to someone else for collecting, distributing and archiving data, while in the meantime, they can be assured by the database producers for free access to those databases. In return, database producers will get from those agencies the information they want to make databases. On the one hand, it seems that such cooperation between the Government and private entities will help to cut the budgetary expenditure of the Government for the purpose of publicizing the government data. But on the other, the net taxes the public have to pay will increase. In a way, public users now have to pay even more “tax” for access to the data which used to be available free of charge, let alone the fact that there will be data which individual consumers can hardly afford.

3. The channels to get government data will be affected. Basic principles of the proposed WIPO database treaty may be in some cases to prevent database makers from exercising monopoly control over information contained in the databases protected by the proposed treaty. But in practice, it is still possible for the database producers who get the government data to have a control over its access. As the relationship between the Government and the

private entities is a contractual one and driven by profits, the latter may have the opportunity to require the former not to conclude contracts with other companies for the same information, thus obtaining monopoly over the information. It then follows that the public will be left with no other channels to get government data but this one, there will be no competition, and prices will rise.

4. Government functions will be affected. The grant of such a *sui generis* protection to private companies for their databases based on the information originated by the Government will create market mechanism whereby Government agencies will no long assume their responsibility to disseminate, maintain and archive information. A special national implementing legislation will be necessary to minimize the negative impact the *sui generis* database protection.

(e) Conclusion

The above analysis shows that a *sui generis* protection for databases will have a general impact of limiting the access to governmental information and other information previously in the public domain, and increasing the costs of database consumers.

So as far as disclosure of government information is concerned, it is suggested that if the proposed database treaty applies to China, corresponding laws and regulations must be formulated to ensure the making available to the public of government information and the public interests.

VII. COMMENTS ON THE RELATIONSHIP BETWEEN A *SUI GENERIS* PROTECTION OF DATABASES AND CIVIL RIGHTS

In the process of establishing a *sui generis* protection of databases, it is inevitable to discuss the relationship between the protection of the database makers and the traditional civil right system. In what way they conflict with each other and in what way they can have a common basis for co-existence.

(a) A *sui generis* Protection for Databases and Freedom of Speech

The relationship between database protection and citizens' freedom to seek, receive and impart information and ideas of all kinds.

The right to access information is considered, in theory, as part of the freedom of speech. Freedom of speech, also known as "freedom of expression", means that the freedom of expressing what you see, what you hear, and what you think of by certain means or forms. It is the core of freedom of speech. If we expand this core, it can include freedom of collecting, receiving, comprehending all kinds of facts and ideas.[93] The legislative body of China has not provided such an interpretation on the article on freedom of speech in the Constitution, but the content of the above can be found in other legal documents. It is

[93] Hou Jian, "Freedom of Speech and its Limits," *Peking University Law Review*, Vol. 3, No. 2 (2000), Beijing: Law Publishing Company, pp. 63.

prescribed in the provision of Article 19.2 of "*International Covenant on Civil and Political Rights*": Everyone shall have the right to freedom of expression; this right shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of his choice." There are essentially same provisions in the *"Universal Declaration of Human Rights," "European Covenant on Human Rights,"* and *"American Covenant on Human Rights."*

As a fundamental right that the Constitution endows the citizens, freedom of speech possesses a multi-dimensional value. According to the analysis of some scholars, its values lie in its ability to: (1) promote knowledge, and obtain the truth, since to listen to the relative information and ideas is the premise to make a proper and reasonable decision; (2) maintain a sound democratic system, advance political dialogues, and promote checking and trust on one another; and (3) protect and improve personal values.[94] The realization of these values is closely related to the freedom of receiving information, a component part of the freedom of speech.

In both the "WIPO Basic Proposal for the Substantive Provisions of the Treaty on Intellectual Property in Respect of Databases", and the "European Data Directive 96/9/EC of the European Parliament and of the Council of March 11, 1996", the rights granted are two folds: (1) to prevent "extraction", which means the permanent or temporary transfer of all of a substantial part of the contents of a database to another medium by any means or in any form; (2) to prevent "re-utilization", which means any form of making available to the public all or a substantial part of the contents of a database by the distribution of copies, by renting, by on-line or other forms of transmission. Based on this observation, we can develop our discussion from two aspects.

It is clear that when database makers are granted the *sui generis* right, one will have to pay more for the information and materials contained in the databases than without such a *sui generis* protection. One will be able to get practically nothing if they do not pay for the authorization by the database makers to access the information they need from the databases, because different from copyright protection, this *sui generis* protection provides no exception in respect of "public interests", such as fair use and compulsive permission. It is a *de facto* "ownership" of the facts, and a complete and perpetual monopoly over the data they have collected. Other people can collect data independently and make databases to compete, but this will only be possible when there is a different non-protected source of data or documents. If the entity which creates the initial data or documents qualifies for the protection of database extraction rights, the data itself will be monopolized, and will never come into the public domain. There are also the practical problems relating to the costs of independent collection of data. One example is when any one other than the telecommunication corporation wants to compile a telephone directory. Absence of the exception concerning fair use and compulsive permission is among the biggest defects for which the *sui generis* protection system is mostly criticized.

On the other hand, even authorized users of databases cannot make "extraction" or "re-utilization" without the special authorization by the owner. Authorized users can receive data or documents from databases by extracting non-substantial part of the contents and can obtain information at a certain expense, but they have no right to "represent" to others the

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[94] Id. pp. 72-89.

substantial parts, even if they are composed of facts. Freedom of "representing fact," another important part of the freedom of speech, will then be affected. Copyright protection permits free use of any facts contained within a work of authorship. In contrast, the *sui generis* protection provides for no such limitations, instead, it would allow practically indefinite protection for facts, as long as they are arranged in a "database"; neither does it provide for any exceptions for socially desirable use of the factual information such as being reported, commented, criticized, or studied.

Freedom of speech, as a right by law, is of course limited, especially by other civil rights, such as the right to privacy, and the right to reputation. Is it excessive to limit freedom of speech by a *sui generis* protection of database makers? In the long turn, such a protection would provide inspiration to the database makers, accelerate the development of the database industry, and would in turn provide more convenient and comprehensive means for people to access useful information. Balancing the rights and interests involves a series of delicate rules. The suggestions put forward by some Chinese scholars may throw some lights on this: The *sui generis* right gives protection to the investment in collecting, arranging and broadcasting information, and forbids others from filching the work of the database makers. This aim is essentially consistent with the nature of anti-unfair competition law. A *sui generis* protection would help specify the rules in anti-unfair competition law. Therefore, to place the *sui generis* protection in the framework of anti-unfair competition would basically determine the contour of the principles it has to follow and the scope to which it applies, thus minimizing risk of monopoly and the unnecessary impair on the freedom to information of the users.[95]

(b) The *sui generis* protection of databases and the right to privacy

The conflict between such a protection and the right to privacy is not as direct and obvious as in the relationship discussed above. Problems arise when databases contain mostly personal data.

Provisions concerning the right to privacy in the *Constitution of the People's Republic of China* are embodied in those on the personal dignity of citizens, the security of the residences of citizens, and freedom and privacy of correspondence of citizens.[96] It is stated in Article 12 of the *Universal Declaration of Human Rights* that "no one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honor and reputation. Everyone has the right to the protection of the law against such interference or attacks." The wording in Article 17 of the *International Covenant on Civil and Political Rights* is substantially similar. In theory, the value of the right to privacy lies in the protection of the personal dignity of citizens, ensuring the senses of peace and safety of individuals and prevent them from spiritual suffering.[97]

In the information society, it is getting more and more convenient and easier to collect, deal with, broadcast and make use of personal data, whereas it becomes more and more difficult to keep the personal data secret. The information provider will go all out to collect

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95 Xue Hong, *"Intellectual Law in the Internet Ages,"* Beijing: Law Press, 2000, pp. 100-101

96 Article 38, Article 39, Article 40 of the Constitution of the People's Republic of China.

97 Zhang Xinbao, *The Legal Protection of the Right to Privacy*, Beijing: Mass Press, 1997, pp. 26-27.

data, including personal information, in order to enrich its database. On the other hand, it is inevitable that people might leak out information concerning their privacy, such as those on themselves or on their families, which would be collected, used and spread, in the process of communication with one another. The development of cable television, online communications and other technologies contribute to the enhancement of the capabilities of the Government and private corporations to conduct surveillance on the information received or shared with others. The commercial collection, processing and utilization of personal data constitutes a threat to the peace and privacy in personal life, thus becoming an area that calls for regulation without delay.

The personal data can be protected by the following means: (1) the collection of personal data shall be carried out with lawful measures, in conformity with the procedures as provided for; (2) the holding of personal data shall be justifiable in terms of its legitimacy in the values and completion of the procedures; (3) the processing and spread of personal data shall be subject to special permission; (4) the subject of data shall have the right to be informed and of data-refreshing; (5) the legal obligation of any improper use of personal data shall be prescribed.

VIII. COMMENTARY ON DATABASE-RELATED CASES IN CHINA

(a) Case 1: Beijing Sunshine Database Company vs. Shanghai Bacai Data & Information Ltd., on technological contracts and unfair competition (1998)

This is regarded, in China, as one of the most typical cases of the dispute and demarcation of the right on the electronic database, at least in the academic community, where there have been a lot of discussions on the case.

In this case, the plaintiff submitted that the company had obtained the market data of fifteen internal commodity exchanges and two security exchanges by an onerous means ever since it was set up in 1994 and after a process of ordering the sporadic market data, a current of market data was formed that is named “SIC Real Time Finance” and transmitted by satellite radio to the customers for consideration. And also an agreement was reached between the company and the customers that the receiver was the ultimate customer and that no re-transmit of the systematical data is permitted.

In August, 1995, the Sunshine Company signed a contract with Bacai Ltd. about the analytic pattern of data and in the contract Bacai Ltd. got the permission from the Sunshine Company of the application of the data pattern of the system to develop and sell analytical software of exchange information, but was not allowed to make use of the system of “SIC Real Time Finance” in other ways. However, the respondent extracted and transmitted the information of “SIC Real Time Finance” and attracted its own customers without authorization by utilizing the plaintiff’s data pattern which was at the time under his reach and control.

The plaintiff deemed that the respondent’s conduct of making use of his system of “SIC Real Time Finance” and attracting its own customers through transmission was a breach to the contract and violated the plaintiff’s business secret. Moreover, the information current of “SIC Real Time Finance” was processed and arranged by the Sunshine Company and was provided with originality that conformed to the requirement of compilation. Thus, the conduct of the respondent’s usage and transmission of the information current of “SIC Real

Time Finance" has violated the plaintiff's right of authorship. The "SIC Real Time Finance" had the legal characteristics of know-how and the plaintiff enjoyed the right of remuneration based on its labor, so the conduct of the respondent violated both the plaintiff's know-how and its right of remuneration.

The respondent submitted the following:

1. The information that the plaintiff transmitted by satellite was public information of commodity exchange and security exchange not protected by law.

2. The market information transmitted by the plaintiff was originated from each exchange and the plaintiff was not the owner of the original information. Therefore even if the respondent had transmitted the "SIC Real Time Finance", the respondent did not infringe any right of the plaintiff.

3. The information that was transmitted by the respondent had nothing to do with the Sunshine Company's system of "SIC Real Time Finance."

4. The notarial attestation provided by the Beijing Notarial Office cannot prove that the respondent utilized the information current of the plaintiff.

The court of first instance, the Intermediate People's Court of Beijing, held after consideration of the case that:

1. As it is generally recognized , information has a value. Thus, any information products and services that conform to the legal requirements should be provided by law.

2. The plaintiff's information in the case was not the original information obtained from each commodity exchange and security exchange, but was the synthetical market information that was obtained through processing and arrangement work by the plaintiff. The plaintiff had put efforts into obtaining, processing, arranging and transmitting the information, which added new value to the plaintiff's information current and made it more valuable than the original information. The plaintiff's information had relatively higher application capability and value. This capability and value rested with its analytical pattern of data, which in turn, can prove the former.

In the contract between the plaintiff and the respondent on the use of the analytical pattern of "SIC Real Time Finance", there was an agreement that the respondent is obliged to keep secret the pattern and not to disclose or transfer it. Thus the analytical pattern of "SIC Real Time Finance" was of a secret and confidential nature.

Therefore, the plaintiff, the Sunshine Company's analytical pattern of "SIC Real Time Finance" held some information that is not familiar to the relevant public and can bring economic interests to the Sunshine Company and has the capability of application, and which the company has taken measures to keep secret. The information conforms to all the legal requirements for business secret and should be protected by the Anti-unfair Competition Law in China.

3. The contract signed by the plaintiff and the respondent on the use of the analytical pattern of "SIC Real Time Finance" is legal and in force.

4. The main evidence provided by the plaintiff is the test record that has been notarized by the notarial office, and the query opinion raised by the respondent is not sufficient to reversed the notarial attestation.

5. The act of extraction and transmission by the respondent, without the plaintiff's permission, of the information source of "SIC Real Time Finance" owned by the plaintiff is a breach of the contract and has violated the plaintiff's business secret. Thus the respondent should bear the liabilities for breaching the contract and liability for tort.

6. With regard to the plaintiff's claim of its right of authorship of its information current of "SIC Real Time Finance" as compilation, "compilation" is defined in the Rules for the Implementation of the Copyright Law of China as a work in which, according to specific requirements, certain works or parts of certain work are collected and compiled. In the case, the information of the price of commodity or forward exchanges does not conform to the requirements of work, in other words, should not be considered as works. After processing and arranging by the Sunshine Company, the data became the information current that has no attributes of compilation works under the relevant provisions. As for the plaintiff's claim of the right of know-how and the right of remuneration, since its right to "SIC Real Time Finance" is protected in accordance with the stipulations of the law, the court does not support this claim.

The respondent refused to accept the trial as final and instituted an appeal to the Higher People's Courts of the Beijing Municipality. The main view of the court of second instance is as follows: the new type of electronic information product, the "SIC Real Time Finance", is an electronic database and is in fact a collection of certain financial data. On the selection and layout of data, such a collection has no originality as required in the Copyright Law and is not considered as works within the meaning of the Copyright Law and thus, shall not be with in accordance with the Copyright Law. However, the investment of the Sunshine Company to the database and its legitimate interests resulted therefrom shall be protected by law. The fact that Bacai Ltd. obtained the market data from the "SIC Real Time Finance" database and immediately transmitted the data, without the permission of Sunshine Company, to its own customers for profits, has breached the principle of good faith and the generally recognized business morality and caused damages to the Sunshine Company's lawful rights and interests. The conduct of Bacai Ltd. has constituted unfair competition and simultaneously breach of the contract. Since the Sunshine Company has based its lawsuit on tort, Bacai Ltd. shall bear certain liability of tort.

In this typical case, we may find that the court repudiated the plaintiff's claim of the copyright of the system of "SIC Real Time Finance" and then attempted to seek other basis for the legal protection of the information. The court of first instance evaded the determination of the nature of data current, and the analytical pattern of information was recognized and protected as a business secret. The court of second instance, however, disaffirmed the former judgment and clearly recognized the "SIC Real Time Finance" as a database, concluding that the related investment and legitimate interests should be protected by law. However, it was under the framework of anti-competition law, and by taking into consideration the breach on the part of the respondent of the principle of good faith and business morality, that tort liability was determines, and it had nothing to do with the *sui generis* protection of databases in the general sense.

(b) Case 2: Guangxi Broadcast & Television Newspaper Office vs. Guangxi Coal Miner Newspaper Office, on the usufruct of the TV Program Parade Table (1994)

In the case, the TV program parade table, as a collection of information, is the object of the right dispute.

The plaintiff, Guangxi Broadcast & Television Newspaper Office, reached an agreement with China Television Newspaper Office and Guangxi TV Station, respectively, that the plaintiff should publish the TV program parade tables of the CCTV and of the Guangxi TV Station at its own expenses. The respondent, Guangxi Coal Miner Newspaper, extracted and published part of the TV program parade tables of both the CCTV and the Guangxi TV Station from the plaintiff's newspaper with no permission from the plaintiff. This act caused relatively great economic losses on the part of the plaintiff and infringed the plaintiff's lawful rights and interests. However, the respondent defended that the TV program parade tables were current affairs news and according to the Copyright Law, current affairs news were not protected by law.

The judgment of the first trial considered that TV program parade was of a nature of premonitory news and thus should be regarded as current affairs news. According to Paragraph 2, Article 5 of the Copyright Law of China, no press units or individuals enjoy the copyright in current affairs news, and anybody can use it freely. Thus, the accusation of the plaintiff has no legal basis and was dismissed.

The plaintiff instituted an appeal. The main content of the judgment of the second trial is as follows: TV program parade tables are not the current affairs news as referred to in Paragraph 2, Article 5 of the Copyright Law. In the meantime, TV program parade tables do not have the "originality" as required by copyright, and the Copyright Law is not applicable for their protection. The appellant gained usufruct through agreements with TV stations and was entitled to promulgate the weekly TV programs in the newspapers. Such usufruct should be protected by law. The appellee's conduct has constituted intentional infringement of the appellant's civil rights and interests. According to the stipulation of Paragraph 2, Article 106 in the General Principles of the Civil Law of China, the appellee should bear civil liability.

The significance of the case lies in that the court, after having excluded the protection by the Copyright Law of the TV program parade tables, recognized the "usufruct" of TV program parade tables and awarded the protection based on the general clause of the General Principles of the Civil Law. Such "usufruct" is rather difficult to be directly incorporated into any existing right system under the legal protection. The judgement may be regarded as a result from an audacious interpretation of the judges to the general clauses, which accounts for the main reasons why the judgment was under severe oppugn.

(c) Case 3: Qingdao Weather Science and Technology Service Center & Qingdao Observatory vs. Qingdao East Mountain Telecommunication Company (1996)

The focus of the case is whether the provision of weather forecast service, which is to the public good, as part of commercial services has infringed the right of weather forecasting departments.

The plaintiff claimed that the respondent transmitted regularly during the day the weather forecast, that the plaintiff disseminated through the media, to his Beep-Pager users

through the latter's Beep-Pager Station. Such transmission by the respondent was the gratuitous utilization without prior authorization by the plaintiff of its technical products it obtained with mental labor. Therefore, such an act infringed the plaintiff's intellectual property right. The respondent defended that his conduct was no more than the extension of the public service of the weather departments and did not constitute an infringement.

The judgment of the court in the first instance, deemed on the basis of the General Principles of the Civil Law that weather forecast has the nature of incorporeal property. The two plaintiffs have common right to it. In the range of the legal stipulations, the owners enjoy the rights of possession, exploitation, earnings and disposal. The respondent, as a business entity engaging in wireless Beep-Paging services, is not using the public weather service in a normal way, and should pay for its use of the weather forecasts. The incorporeal property as the work of intellectual labor is protected by the General Principles of the Civil Law. According to this, the respondent's conduct was judged having constituted tort.

The respondent appealed. The court in the second instance further deemed that even if the respondent obtained the weather forecasts on the city of Qingdao from the weather forecasts issued by the Central Observatory, the weather forecasts were still the work of the plaintiffs. The respondent is not entitled to transmit selected weather forecasts as a means of its Beep-paging services, though he may have the right to know for itself the daily weather forecast of Qingdao city.

In this case, both the judges of the first and the second trials established an exclusive "incorporeal property" for weather forecasts. As weather forecasting is of a nature of public good, the judges made distinction between the public services and onerous services. This may shed some light on the approach of the database protection.

(d) Case 4: Copyright Dispute in respect of "Modern Chinese Dictionary" (1996)

The plaintiff, the Language Graduate School of the Chinese Academy of Social Sciences and the Commerce Publishing House claimed that the "New Modern Chinese Dictionary" and the "Modern Chinese Great Dictionary" edited by the respondent Tongyi WANG as chief editor, and published by the respondent the Hainan Publishing House, have used, without authorization, a great deal of the content of the plaintiff's work -- "Modern Chinese Dictionary" and "Complement Volume of Modern Chinese Dictionary", thus infringing the plaintiff's copyright and exclusive publishing right. The respondents defended that the entries that they used were the shared materials of words and expressions. The work of the plaintiff was no more than the collection and record of those entries, which was not creative. Moreover, entries were different from independent works, there is no room for exertion of originality by the sentence makers. The Language Graduate School only enjoyed copyright of the dictionary as a whole, but not of the individual entries.

The decision of the first instance was based on the findings that "Modern Chinese Dictionary" and "Complement Volume of Modern Chinese Dictionary" were the dictionaries independently created by the authors. The Language Graduate School had the copyright in the two dictionaries, and furthermore, in accordance with the characteristics of dictionaries, the Language Graduate School also enjoyed the copyright in the entries that were of an "original" nature. The Commerce Publishing House enjoyed the exclusive publishing right according to law. The respondent had not provided sufficient evidence to prove that words which the plaintiff used as examples to accuse the respondent of plagiarism were taken from

knowledge in the public domain. Thus the conduct of the respondent has constituted the plagiarism. The court finally found that the respondent had duplicated and published works, which infringed copyright of other parties, for the purpose of making profits and that the respondent's conduct has constituted infringement of the plaintiff's copyright and exclusive publishing right.

The respondent instituted an appeal. According to the decision of the second instance, the paraphrases and examples used in the "Modern Chinese Dictionary" and the "Complement Volume of Modern Chinese Dictionary" were created by the author and conformed to the constituent requirements of works. The Language Graduate School enjoyed the copyright to the original paraphrases and examples and the Commerce Publishing House enjoyed the exclusive publishing right to the "Modern Chinese Dictionary" and the "Complement Volume of Modern Chinese Dictionary." The appellant's conduct has constituted infringement to the above mentioned rights of the appellee. Synonyms used for the purpose of paraphrasing have a tendency, in the long run, of establishing a fixed parallelism, which should not be easily changed. For words and expressions used to express time and appellation, or those with a simple meaning, or those used in specialized areas, the range for selecting words to paraphrase is extremely limited, and no protection should be provided under the Copyright Law. On the other hand, however, the appellee had put labor into the selection those paraphrases and the appellant cannot just directly copy the work of the appellee resulted from its hard labor. The judgement of the first instance concerning the appellant's civil liability is thus supported.

The significance of the case to database protection is that for those paraphrases that were not under the protection of the Copyright Law, the court of the second instance made them protectable by adopting the concept of "work of labor" and therefore the respondent should also bear legal liability for its act of "direct copying."

(e) Case 5: Shenzhen Yingyuan Science & Technology Ltd. vs. Shenzhen Match-making Service, etc. on the disputes of software copyright and business secret (2000)

The plaintiff claimed that in 1998, it concluded a contract with the respondent, Shenzhen Match-making Service, to cooperate in the establishment and management of a of match-making website–"Love Net." It is agreed that the plaintiff owned all the copyright and ownership of the software that was developed in the website and the respondent owned all the match-making data, and that under no circumstances should the respondent disclose to a third party the software of " Love Net" or part of it, nor should the plaintiff expose to a third party the match-making data. Later, the plaintiff independently developed a software that is used for making friends through the Internet. Both the programming files and the database files of this friend-making software existed and are being used on their own, independent of the software and its database files as stipulated in the contract. However, in April 2000, the respondent unilaterally declared the termination of its cooperation with the plaintiff and sent employees to the office of the plaintiff and illegally duplicated the match-making software and the friend-making software from the plaintiff's server. After the illegal duplication, they deleted the above mentioned software from the plaintiff's server. Due to the lack of a back-up of the match-making software and database, the plaintiff had since lost his programming codes and database of the match-making software. The respondent used, without the plaintiff's authorization, his friend-making software and his member database on another website, and cooperated with a third party in the management of that website, which

provided the third party access to the software in respect of which the plaintiff enjoyed copyright, and to his business secret, thus extending the scope of the infringement to the rights of the plaintiff.

The respondent defended that the software of Love Net belonged to the website of the Love Net, which had been clearly prescribed in the contract. The Match-making Service had indefinite and free usufruct of the Love Net software. In the development of the Love Net software, the Match-making Service had provided materials and suggestions and thus enjoyed copyright to the software. The Match-making Service denied that the software used in the new website was the one developed by the Yingyuan Ltd., nor was there any duplication of the programs of the software. No modification is made of the plaintiff's work, so there is no infringement of the plaintiff's copyright.

The judgment of the first trial was based on the following considerations: the software used by the Yingyuan Science & Technology Ltd. was original, while the software used by the Match-making Service was not. The software used by the Match-making Service and the one used by Yingyuan are essentially similar. The use of the software by the Match-making Service should be limited within the scope of cooperation between the two parties. Modification by the Match-making Service, without due authorization by the plaintiff, i.e., the copyright owner, to part of the match-making software and friend-making software and its use in the registered domain name is an act of infringement.

The respondent has instituted an appeal. But no judgment of the second instance has been delivered yet.

In this case, the database made up of match-making data and friend-making data was not at issue. It constitutes part of the objects of the infringement, but the plaintiff did not make clear claims to it due to other considerations. Anyway , the case has demonstrated the position databases may have in Internet-related disputes.

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