Information Resource Development in China

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ABSTRACT

This paper introduces the history and current situation of Information Resource Development in China, with emphasis on the introduction of various initiatives under way. It also analyzes the impact of the Information Resource Development policies of the Chinese government.

HISTORY OF CHINA'S INFORMATION RESOURCE DEVELOPMENT

In its several thousand years of social progress, China has put continuous efforts on cultural development. Various ancient Chinese dynasties, such as Han, Tang, Song, Ming and Qing, carried out large-scale cultural development movements, which to a certain extent contributed to the exploitation and utilization of information resources.

Since the founding of the People's Republic of China in 1949, the government has been attaching great importance to information resource development. In 1956, the government set "March Towards Science" as the directing principle for the course of information resources management, and made conscientious plan in information resource development with the emphasis on collecting, rearranging, analyzing, indexing and reporting scientific and technological documents from home and abroad to serve the need of professionals in various disciplines. Till 1987, there were 236 abstracting and indexing journals published annually, covering more than 1.2 million documents and articles.

In late 1980s and early 1990s, however, information resource development was affected by the readjusting of China's economy. Non-profitable libraries and information service institutions suffered from a severe shortage of money for collection development. As a result, many abstracting and indexing journals stopped publication. But on the other hand, there emerged some new abstracting and indexing journals as well as bibliographical databases, which catered to market demand.

Since mid 1990s, under the promotion of the tide of information superhighway construction in many countries, information resource development in China entered a new phase.

INFORMATION POLICY BY THE CHINESE GOVERNMENT

In 1997, Chinese government constituted "Draft on China's Informationalization", drawing the outline of China's information infrastructure[1], which includes six elements as follows:
- Information Resource
- National Information Network
- Information Technology (IT) Application
- Information Industry
- Information Professional
- Information Policy, Code and Standard

Information resource was set as the primary element among the six, which showed the state's emphasis on its development. This also indicated that people once again realized the importance of Information Resource Development. Several years later, the proposal was accepted as a part of China's tenth "five-year plan", which marked that Information Resource Development became the central task of China's informationalization drive.

MAJOR INITIATIVES IN CHINA'S INFORMATION RESOURCE DEVELOPMENT

Under the guidance of the aforementioned policies, the Chinese government initiated several major information resource development projects to change the current situation of inconsistency between information resource development and information network construction and lessen the discrepancy between information resources available and that required by the public.

(1) CALIS (China Academic Library and Information System)

CALIS is an initiative under China's plan to build 100 key universities in the 21st century (named "211 Project" by the Ministry of Education). It aims at constructing a networked information resource sharing system based on China Education and Research Network (CERNET) so as to parallel the development of communication network and information resource network, thus providing university staff and students as well as professionals in research institutions with easy access to a national information service system which is characterized by abundant information resources, advanced technologies and convenient service system. The service system consists of a CALIS national management center, 4 CALIS national information centers (covering science and social science, engineering, agricultural science and medical science respectively) and 7 CALIS regional information centers (in Beijing, Shanghai, Nanjing, Guangzhou, Xi'an, Chengdu, Wuhan and Changchun respectively). The system will be also linked to major information service systems outside China to form China's Academic Library and Information System. The construction of CALIS will greatly increase the amount of information available to academic libraries and also improve their capability in information services.[2]

(2) China Digital Library Project

China Digital Library Project is carried out under the coordination of the Ministry of Culture. Enterprises and organizations such as China Telecom, National Library of China, Chinese Academy of Sciences, China Aerospace Industrial Corporation, Peking University and Tsinghua University participated in the project.

The project strives to:
I) build a cross-region, cross-industry culture and information network, making it the National Information Infrastructure (NII) in China.
II) collect cultural information from nation-wide libraries, museums, memorials, press and publication institutions, art groups, sports institutions, travel agencies etc., and build a huge knowledge repository represented by digital libraries, digital museums and digital film and TV centers.
III) build integrated information resource network based on existing backbone communication networks, so as to provide user-oriented service to satisfy users' demand in flexible network connection and fast-speed information retrieval to different kinds of resources databases.

IV) develop intellectualized user interface in Chinese and popularize the use of the Internet so that users can have access to resources on the Internet with such convenience as the easiness they enjoy when they watch TV. This will undoubtedly maximize the utilization of the cultural information resources on the Internet.

As the achievements of the project, it is expected that some twenty resource databases will be made available on "China Cultural Information Network", among which are China Medical Science Resource Database, China Tourism Resource Database, China Economic Resource Information Database etc. The network will become a significant channel of spreading Chinese culture and strongly support China's project of "rejuvenating the nation through science and education" (*ke jiao xing guo zhan lve*). As a cross-century comprehensive project, the construction of China Digital Library will be conducive to the development of many related industries, especially information industry and cultural industry, finally benefiting the national economy as a whole.[3][4][5]

In China's Taiwan Province, 8 digital library initiatives are currently under way, including the construction of a Digital Library and Information Center and building of Haoran Digital Library in Jiaotong University. Objects of the initiatives are to promote information exchanges among learning and research institutions in Taiwan and coordinate their purchase of information resources such as databases from foreign countries. Another object is to promote the research on Chinese culture, especially Chinese history.[6]

(3) Construction of China National Science and Technology Library

In 1998, the State Council initiated a reform to scientific and technical information institutions. In June 2000, China National Science and Technology Library was formally established. As a virtual scientific and technical resource center, it consists of 8 library and information institutions such as Library of Chinese Academy of Sciences and Institute of Scientific and Technical Information of China. The center utilizes advanced technologies and methods to collect information from domestic and foreign sources. It also makes standards and criteria in information sharing. Moreover, the center serves as a bridge of cooperation between Chinese information resources management professionals and their foreign counterparts.[7]

(4) Construction of National Research Centers for Information Resources Management

Three national research centers for information resources management have recently been set up in Beijing, Nanjing and Wuhan to promote researches on theories, policies and technologies in IRM. Based on the cooperation with Department of Information Management of Peking University, Department of Information Management of Nanjing University and School of Information Management of Wuhan University, the centers will focus on establishing information resources management policies, mechanism and technologies which not only accord with the current situation in China, but also help to strengthen international cooperation in the field of IRM.

INITIAL IMPACT OF THE POCLIES

Started in November 1998, CALIS has completed its first phase of construction by the end of 2001. Currently, the system can provide online public access catalogue, interlibrary loan (ILL), Internet navigation, online cataloging, cooperative literature purchasing and various other functions, through digitalization of information resources, networking of information services and cooperation among participating academic libraries. As a result, universities and colleges in China now possess information resources greatly more than ever before: variety of foreign periodicals increased by 1/3; 95% of the Chinese literature and 80% of the foreign literature are now available; more than 100 academic libraries offer 24-hour online information services. In addition, 25 distinctive databases and 194 disciplinary navigation databases are built.

In its second phase of construction starting from 2002, CALIS aims to further strengthen the document supporting ability of academic libraries. It plans to realize automation and networking of about 1,000 academic libraries, among which 100 will be fully automated and networked, becoming the backbones in information resource sharing. Some 20 academic libraries will be developed into digital library bases, acting as the kernels of information service systems and distributing centers of information resources. Besides, digitalized information resources imported from foreign countries are expected to cover all subject areas while domestic information resources will be as much as several Tera Bytes. [8]

Constructions of China Digital Library and National Science and Technology Library have been advancing smoothly. In April 1999, China Cultural Information Net started operation as the top level of China Digital Library. In November 1999 and February 2000 respectively, the Capital Library and China Radio International (CRI) became experimental units of China Digital Library project. Experts from various fields of study are doing extensive researches on technological, operational and legal issues involved in the construction of digital library. Recently, the directing committee of the China Digital Library project proclaimed that construction of China Digital Library must be expanded to include digital resource development. China Digital Library should be more than a digital library; it should be constructed into a digital resource center. It should include information resources not only from libraries, but also from the government, even from international channels. The ultimate goal of the project is to build a "Digital China".

The initiative of building National Science and Technology Library is near conclusion. Through two years of construction, participating libraries now collect more than 16,000 types of foreign scientific and technical literatures (including periodicals, conference proceedings, technical reports, etc.), as compared to no more than 4,000 types in 1996. Some 3 million bibliographical records have been put online and the number is estimated to reach 5 million by the end of 2001. Network service system provides 24-hour free secondary literature retrieval service to Internet users. Every month, an average of 250,000 users visit the system. More than 1,000 users have ordered full-text document service.

At the same time, information resource development in market-oriented approach achieves great effect. Many database and information service providers (such as ICP, ISP) come into operation, among which, China Academic Journals CD-ROM database, ChinaInfo Group, Chongqing Weipu Information Consulting Corporation Ltd. (www.vipinfo.com.cn), Beijing Scholar Sci-Tech Co., Ltd., and China Infobank etc. enjoy nation-wide reputation. China Academic Journals CD-ROM database includes more than 5 million articles from 6,600 major periodicals published in Mainland China since 1994 as well as more than 15 million bibliographical records. The database is available both online and in CD-ROM form.

In a broader context, Internet-based information resources have also undergone rapid development. According to statistics from "Survey on Information Resources in China" which was released by China Internet Network Information Center (CNNIC) in September 2001[9], there were 692,490 registered domain names, 238,249 web sites, 159,460,056 web pages and 45,598 online databases in China. With the further improvement of information infrastructure and the intensifying of international communication brought by its entry into WTO, China will surely embrace a boom in information resource development in the 21st century.

REFERENCES

[1] ZOU Jiahua. Promoting National Informationalization. *China Electronics Daily*. September 16, 1997
[2] http://www.calis.edu.cn/
[3] XU Wenbo. Constructing China Digital Library Project. *Guangming Daily*. May 7, 1999

[4] SUN Chenjian. Towards Digital Library in *Collected Thesis on Digital Library*. Shenyang: NEU Press, July 1999

[5] XU Wenbo. Great Significance in Building China Digital Library. *Guangming Daily*. March 8, 2000

[6] LV Yinan. Digital Library in Taiwan. *China Computer World*. May 31, 1999

[7] YUAN Haibo, Meng Liansheng. A Practice on Information Resource Sharing in Web-based environment – Construction and Development of National Research Centers for Information Resources Management. Proceedings to Academic Seminar Commemorating 45th Anniversary of China's Science and Technology Information Cause. Beijing: 2001

[8] ZHU Qiang. A Rewarding Practice on Information Resource Sharing Oriented towards the 21st Century—Advances in the Construction of China Academic Library & Information System. Proceedings to 2001 Annual Meeting of China Society for Library Science. Chengdu: 2001

[9] http://www.cnnic.net.cn/tj/

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