A Brief Analysis of Digital Resource Developments and Services in the National Library of China and the National Digital Library Project

National Library of China

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NLC is the direct constructor of China National Digital Library. Since the 1990s, NLC has followed IT technological developments, devoted to the researches of digital library's application in various aspects, carried out a large number of experiments in digital resource developments and the construction of digital library model. After entering the 21st century, NLC in the principle of "constructing along with serving" has not only conducted the construction of National Digital Library but also provided the readers with a lot of digital resource services for their free use on Internet, trying its best to construct a state-level Chinese literature base.

I. Digital resource construction

At present, the total volume of digitalized resources in NLC has reached 120TB. In order to accelerate the construction of digital library, Digital Resource Development Plan of NLC (2006-2010) has been formulated. The goal for the digital resource development defined in the Plan is to identify NLC digital resources into large-scale and complete series with distinctive features till the end of the year 2010.

Copyright

- Directly solicit the long-term preservation right and access right from the author and the publishing house
- Solicit the long-term preservation right and access right from the resource content provider
- Solicit openly through the website
- Solicit though various activities. (E.g. Wenjin Book Prize)

The digital resource construction of NLC includes the following ways

- Self-developed resources: Especially collected resources in the library mainly represented by the self-developed resources
- Cooperative construction: Make joint efforts with the large institutions at home and abroad to develop the library collections, including resource exchange and consignment processing etc;
- Outsourcing resources: Mainly represented by the electronic resources circulated in the market, such as E-books, periodicals, newspapers and databases;
- Network collection: Solicit Internet resources and solicit openly the resources through network;

- The digital resources will be planned and constructed according to a three-level system, namely Chinese Metadata Base, Digitalization of Featured Resources and Construction of Thematic Knowledge Base. In terms of construction contents, the integration and development will be centered on the special library collections and the thematic resources embodying Chinese culture. Six major digital databases will be planned, including special library collections, overseas Chinese Studies, Chinese histories, Chinese laws, digitalized local chronicles and solicited network resources.

Self-developed resources

- Bibliographic Data of the Library: over 3.8 million items
- Authority Data of the Library: over 0.7 million items
- Chinese Union Catalog Data: about 2.6 million items
- Membership Libraries and Data Users: 972
- Ancient and Rare Book Union Catalogue: 0.13 million items
- Union Catalogue of Books before 1949:   0.139 million items
- Full-Text Images: 103 million pages

Self-developed resources

- Books during 1911-1949:   1.6 million pages
- Periodicals during 1911-1949:   2300 varieties, 60 thousand issues, and 4.6 million pages
- Self-developed Doctoral Dissertations: 97 thousand titles/12 million pages
- Old Photo Database: about 60000 items
- Oracle Bones   6000 bibliographic records / 12000 images

Self-developed resources

- Rubbings: 25000 items
- Ancient Chinese Classics: 80 books/5 million words
- Audio Digitalized Conversion: 0.45 million tracks
- Video Digitalized Conversion: 15000 programs
- Academic Lectures: 268

Cooperative development

- Full Texts of Local Chronicles Collected in the Library: 1700 titles/1.1million pages

- Images of Local Chronicles Collected in the Library   2864 titles/1.68 million pages

Outsourcing resources

- Chinese Databases   32
- Foreign-language Databases   56
- Western-language Rare Book Text Databases   0.338 million titles /70 million pages
- Full-Text Chinese Electronic Books   0.12 million titles /0.24 million volumes
- Full-Text E-periodicals   Chinese: 9000 titles; Western languages: 6000 titles
- Full-Text E-newspapers   Chinese: 800 titles; Foreign languages: 124 titles
- Audio and Video Literatures   about 0.11million pieces
- E-journals   0.02 million pieces

Network collection

- Network Resource Collection: 7 special subjects，over 20 thousand government websites and 105 titles of E-newspapers
- Online Exhibitions: 13

II. Digital resource services

Providing digital resource services has been the emphasis of the work carried out by NLC. On the first stage, the Library mainly provides services to the readers through the Internet. With the development of IT, NLC will also provide the services based on portable equipment such as mobile phones and PDA.

NLC set up a digital resource portal, effectively integrating the digital resources of NLC, enabling the readers to conduct a one-stop access to most digital resources provided by NLC and considerably enhancing the readers' access rate to the digital resources.

NLC also constantly broadens the channels of services for the grass-root medium and small libraries. In order to better support the work of those libraries, NLC launched an activity to give away cards to them. With the cards, the libraries can directly get access to the full-text E-resources provided by NLC.

the digital resources found on the Internet include

- Founder Chinese E-books: 0.12 million titles, 0.24 million volumes (every title has two copies. The long-distance readers are authorized to access 20 thousand of them.)
- Western Rare Book Texts of E-books: 0.338 million titles/70 million pages
- New Year Picture Resource Base of the Library: 163 titles/190 scrolls
- Online Lectures: 247
- Online Exhibitions: 11
- Sinology Resource Base: 100 sinologists/ 300 websites
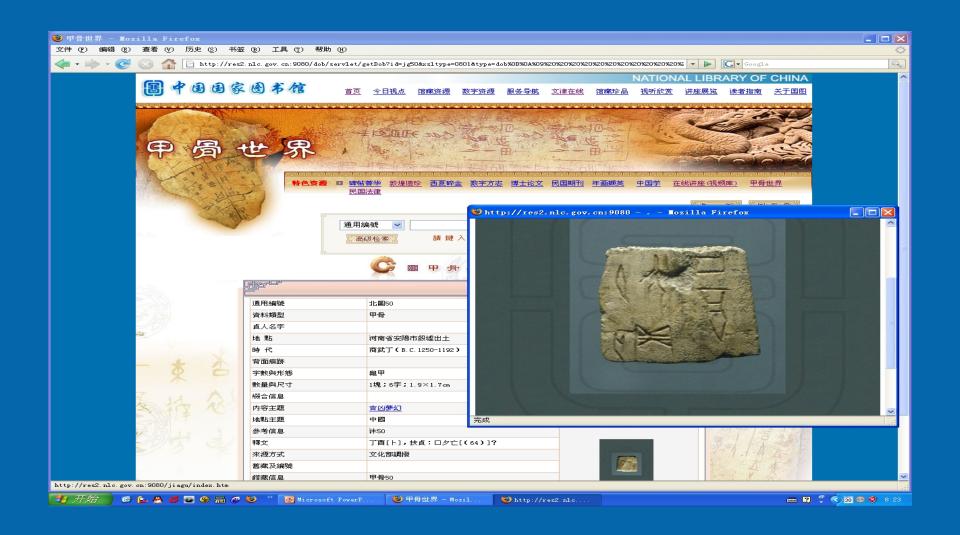
- Network Information Resource Collection and Preserved Government Websites: 20 thousand; Collections on Special Subjects: 7
- Rubbings: 20 thousand titles/25 thousand pieces
- Doctoral Dissertations: 60 thousand volumes/1.4 million pages
- Periodicals during 1911-1949:   2300 titles, 60 thousand issues and 4.6 million pages;
- Digital Local Chronicles: 2864 titles and 70 thousand pages of full-text images
- Wenjin Book Prize: 650 titles;
- Chinese Ancient Classics: 80 books, 5 million pages

The digital resources provided by NLC local area network (LAN)

- Chinese Full-Text E-periodicals: about 9000 titles
- Western Full-Text E-periodicals: about 6000 titles
- Chinese Full-Text E-newspapers: about 800 titles
- Foreign Full-Text E-newspapers: about 124 titles
- Electronic Full-Text Doctoral and Mater's Dissertations: 0.8 million
- Electronic Full-Text Conference Discourses: 0.9 million
- Chinese Databases: 32

- Western-language Databases: 56 (including 132 sub-databases)

- The digital resources provided through proprietary networks mainly include:

- Video Digitalized Programs Collected in the Library: 1000 (VOD programs in the reading rooms);

- Zhongnanhai Website Data: 18 million characters, 7000 pictures and 200-minute video;

- LAN VOD Video Programs Provided in Children Multimedia Reading Room in the Ancient Book Branch Library: 5 categories, 366 titles and 6000 programs.

III. The construction of the digital library

NLC Phase-II Project and National Digital Library Project is composed of two parts: NLC Phase-II Project and National Digital Library Project. The total investment of the project amounts to 1235 million yuan.

The general goal of National Digital Library Project: through construction of document digitalization processing center, digital resource processing and integration center, digital resource storage and management center, network management center, digital resource service center, system development and maintenance center, development and research center and exhibition and training center,

- The collection of digital resources is to form digital library collection through collecting, choosing and registering multi-format, multi-carrier and multi-media digital resources. According to the operation requirement of collecting digital resources, electronic resource submission and network resource collection are newly added. In the operation management of collecting digital resources, its intersection and coordination with published literature or non-published literature (hereinafter refereed to as the traditional literature) should be properly dealt with.

- The processing and integration of digital resources is to integrate metadata and object data through processing, describing and indexing the digital resources to set up the special topic resource databases and knowledge organization systems. In the digital resource processing management, realize the conversion of traditional metadata format, the interoperability and uniform search of various metadata as well as the further processing and organizing of digital resources so as to satisfy the users' various requirements of searching and accessing digital resources.

- The organization and management of digital resources is to conduct orderly management of digital library collections, conduct effective control over non-local heterogeneous digital resources in order to provide reliable guarantee for digital resource services. In the operation of digital resource organization and management, solve the coordination problem between database management and traditional document management and make the advantages of traditional documents and digital resources complementary to each other.

- The release and service of digital resources is to realize search service, website service, electronic reading room service, electronic commerce service, virtual reference service, interlibrary loan service, document delivery and information push services by establishing a digital resource release platform and a uniform digital resource service portal. In the digital resource release and service management, satisfy different requirements of both the readers who pay visit to the library and those who not, and solve the problem of connection to traditional service forms and contents:

Network, satellite and data broadcas

- Realize the complete network environment of the whole library area
- Realize the connection between the double-direction satellite data broadcast and the whole NLC network
- Realize wireless coverage network;
- Realize the short message gateway;
- Realize the interface of the calling center

Computer systems

- Set up a heterogeneous cluster system
- Set up high-performance multiplex computers

Storage systems

- Take advantage of virtual storage technology and realize the online, near-line and off-line storage management;
- Apply the technologies such as real-time backup, disaster backup, synchronized database and non-synchronized files etc.
- Storage and backup management.

Software systems

- Try best to choose commercial software;
- Try best to use software generating technological achievements;
- Choose software development teams rich in relative experience.

The rapid development of IT in China and the construction of digital libraries have provided golden opportunities for the development of the National Library of China. In 2006, NLC formulated and released its eleventh five-year plan. From 2006 to 2010, it will initially realize the transformation of traditional library operations and services. Based on providing traditional literature services and guided by strengthening modern information services, the Library will construct a new intellectual service system to make contributions to the social development.

Thanks

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