UCDRS and the Trend of Collaborated Real-Time Digital Reference Services in China
聯合參考服務·文獻傳遞與中國即時數位參考服務的發展趨勢

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【Abstract】
The development of computer and Internet technologies provides an alternative way for libraries to better serve their patrons. In addition to traditional reference service, online digital reference is becoming more predominant. Real-time digital reference, another form of online digital reference, allows synchronous communication between patrons and librarians. This reference service was developed in China at the beginning of the 21st century. United Combined Digital Reference Service (UCDRS) is currently one of the most visited real-time digital reference services in China. Detailed information on the system work flow, the user and the reference librarian experience, as well as document delivery is discussed in this paper. The authors conclude that UCDRS system of China is a firm and solid example of the trend.
that is becoming the norm for library reference services in China.

【摘要】

電腦和網路技術的發展，提供圖書館在滿足顧客需求時的另一種服務之道。除了傳統的參考服務，線上數位參考服務也越来越受到重視。作為線上數位參考服務形式之一的“即時數位參考服務”，實現讀者與圖書管理員之間的同步溝通。中國從21世紀初開始使用即時數位參考服務，「聯合數位參考服務與文獻傳遞服務(UCDRS)」是中國目前使用率最高的即時數位參考服務。本文針對「聯合數位參考服務與文獻傳遞服務(UCDRS)」的系統工作流程、使用者和參考館員的經驗與文件傳遞進行了詳細介紹和探討。作者認為「聯合數位參考服務與文獻傳遞服務(UCDRS)」為目前中國圖書館在參考服務的模範，同時它也代表了中國圖書館參考服務未來的發展趨勢。

Introduction

The development of computer and Internet technologies provides an alternative way for libraries to serve their patrons. In the past, traditional reference service was mediated in person, by phone, fax or letter. These means made the best use of collections to satisfy their informational needs. As of late 1970s, librarians have been quick to offer new technologies. Web forms and e-mails provide solutions for information seekers working from their desks. “Ask an IPL (Internet Public Library) Librarian” (http://www.ipl.org/div/askus/), “Ask a Librarian” (http://www.hw.ac.uk/library/chat.html) at Heriot- Watt University in the United Kingdom, and “Ask Us” (http://tiny.cc/umNGp) at Koç University in Turkey are good examples of reference librarians serving their patrons by using web-based submission forms.

Recently the use of Multi-User Object Oriented technology, mobile phone SMS, chat software, and CU-SeeME videoconferencing technology has made it possible to offer real-time digital reference. In the United States, over 300 libraries in more than forty-five states are using chat software such as: IM (Instant Messaging), SMS (Short Messaging Service), MeeboMe, and libraryh3lp for reference services. “AskNow”, a service of National and State Libraries Australasia, also allows patrons chat with librarians online (http://tinyurl.com/b29g2g). Further more, real-time collaborated reference services and content-share can be easily accommodated with recently developed contact and call center software. “QuestionPoint” (http://www.questionpoint.org/), built by a cooperative of more than 1,000 participating libraries, provides 24/7 reference service in real-time.

Collaborated Real-Time Digital Reference Services

Real-time digital reference service is a new phenomenon that allows reference services to be conducted by a librarian in a synchronous dialogue. This offers the patron a better means to clarify an information need by use of application sharing to deliver information online (Kawakami, 2003). Real-time digital reference eliminates the communication delays between patrons and reference librarians who use emails and web-submission forms. It is also more accessible and welcomed by those patrons who need immediate answers for their research. This need for immediate information retrieval is especially true for those patrons of the younger generation.

The beginning of the 21st century brought real-time collaborated digital reference service which has grown to encompass world wide, regional and local levels. On November 17, 2000, the Collaborative Digital Reference Service (CDRS), a project hosted by the Library of Congress in collaboration with the national libraries of Canada and Australia as well as some 60 other institutions, began taking questions that were submitted through reference librarians at its member
institutions. It was the first of its kind to connect users with accurate, timely, and credible information through an international digital network of libraries and related institutions (Library of Congress, 2008).

The Association of Southeastern Research Libraries (ASERL) has chosen the University of South Carolina School of Library and Information Science to operate its Ask-A-Librarian Online Chat Reference Service. This online reference service is available to individuals at participating ASERL institutions. The program is operated as a paid internship for students pursuing master's degrees in library and information science (ASERL, 2009).

“AskColorado”, a joint sponsorship of the Colorado Department of Education and Colorado State Library, was launched in 2003. It involved over 200 staff members from Colorado libraries who shared various responsibilities. “AskColorado” answers over 2,000 questions a month and has elicited many favorable comments such as the following: "Fantastic use of my taxpayer dollars!" (Staff, 2005)

Thomson Gale launched a beta version of “AccessMyLibrary.com”, which allows Thomson Gale’s content to be crawled and indexed by major search engines. This permits authenticated users from thousands of libraries to gain free access to millions of its documents. OCLC implemented "Ask a Librarian," a pilot project within the Open WorldCat program that permits searchers to submit questions to librarians through online reference services via OCLC member libraries. “Keeping a collaborative virtual reference service going requires tenacity and dedication. Imagine trying to get over 50 public, academic, school, and special libraries to agree on an equitable way to divide staff time and expenses on the “AskColorado” project. This is a major accomplishment.” (Online, p. 52, 2005)

The U.S. Government Printing Office (GPO), with the University of Illinois --Chicago (UIC) and nearly twenty public, state, and academic federal depository libraries around the United States, provide online reference service to the American public. This free, web-based Ask a Librarian service (http://131.193.153.128/) gives the public an opportunity to ask librarians questions about government resources (GPO, 2008).

The Shanghai Library in China has a well-established collaboration of online reference services using chat and e-mail. It is staffed by over twenty librarians in the Central Libraries network. Consequently, this network has recently expanded to include librarians from other countries such as Singapore and the Queens Borough Public Library in the United States. The Shanghai Library has developed several services that use short message service (SMS) and micro-payments through the cell phone. The Document Supply Center of the Shanghai Library develops and staffs an SMS reference service. They have also developed an implementation for patrons to register for lectures and workshops by use of their cell phones. Another practical upside of this program lets patrons use their mobile phones to pay for document delivery. Payment is arranged with China Mobile and the amount is deducted from the patron’s prepaid mobile card (Kern, 2008).

**Ucdrs in China**

In addition to Shanghai Library in China, other real-time digital consortial reference services exist. Since 2003, China Academic Library and Information System (CALIS) has initiated a collaborative virtual reference service. By using chat technology and a collaborative browser, the reference librarians provide answers and information to the currently enrolled college students throughout the country (http://www.calis.edu.cn/calisnew/calis_index.asp?fid=3&class=7). In 2005, the National Science Library of the Chinese Academy of Sciences (http://dref.csdl.ac.cn/digiref/index.jsp) began to offer collaborated real-time digital reference service. Librarians from thirty-eight member institutions were able to gain access to a
collaborated real-time digital reference platform in order to answer patron-related science questions. Unfortunately, this service did not include document delivery.

With the financial support and policy administration of the Ministry of Culture of the People’s Republic of China, the United Combined Digital Reference Service (UCDRS) is currently the most visited real-time digital reference service in China. Libraries from sixteen provinces are involved and almost 400 reference librarians from forty-nine public, academic, and research libraries are there to provide real-time digital reference service every day from 8:00 A.M. until 9:00 P.M. (http://www.ucdrs.net/league/LeaguerList.aspx). Since its inception in 2003, more than one million questions have been answered and more than 3.7 million documents have been delivered. As of March 13, 2009, the UCDRS site was visited by over 1.9 million users, one-third of which were K-12 and college students. Other main users include: teachers, researchers, businessmen, parents, and government officials.

**UCDRS Mission**

The Mission of UCDRS is to provide free and equal services and resource access to the public. These services take place via real-time digital reference and digital document sharing based on the biggest Chinese database system. This database system currently includes seventeen sub-databases in the Chinese language, covering full-text electronic versions of an upwards of 90,000 books, 200,000 periodical articles, 350,000 dissertations and master theses, 200,000 conference proceedings, 35,000 standards and 860,000 patents. (http://www.gdoverseaschn.com.cn/xqjj/jxxx/200605150025.htm). To qualify, each participating library must sign the United Combined Digital Reference Service Resource Sharing Agreement before having access to this database system. It is also expected that these participating libraries follow USDRS’ Constitution and Bylaws.

**UCDRS Work Flow**

Thinker netSIMP is used as the system management platform. When visiting the UCDRS homepage at http://www.ucdrs.net/, users will see the “Search Engine” page (Figure 1), which provides them with several options:

1) Users are able to directly search UCDRS’ databases by clicking on “數位資源 Digital Resources” button. No passwords are needed for any of the Digital Resources, and the users will be directed to the Digital Resources search page where keywords can be entered. The search engine currently support searches in Chinese or English (Figure 1).

After entering keyword(s), and clicking on the “檢索 Search” button, the user’s search results will be displayed as Figure 2.

Users are then able to select any of the results, and proceed to the next step as in Figure 3. The large frame displays the patron’s results list. After the patron has made his or her selection, the patron then submits their email address and phone number in order to receive the full-text document(s). The required document(s) will be delivered to the user’s email account within twenty-four hours.

2) On this same page, users also have the ability to log on to their accounts. “My Reference Results” is a virtual space provided for registered users to save their search results. Registered users automatically receive all documents including chat records and transcripts via email. Even though registration is not a requirement, unregistered users must provide contact information so that they can receive their requested information.
3) Users can view the latest news about services, statistics, and resources at the UCDRS homepage. They may also view how many reference librarians are online. Along with being able to view the number of online librarians, users are able to see how long these librarians been online, in which area they are specialized, and whether or not they are busy helping others (Figure 4).

4) Within a twenty-four turn around, un-answered questions as well as answered questions are posted on this page for the librarian and patron’s reference. Un-answered questions appear in the upper frame and answered questions are listed in the lower frame in Figure 5.

5) If the user decides to ask a librarian for help, it is up to the discretion of the user to choose which librarian to query. Afterwards, the user and the librarian of their choice will share the browser, thereby being lead to the following page in which real-time references can occur (Figure 6).

Links to Database Searching, Document Delivery, Chat Record, and the Service Evaluation are available in the small square to the right of the bottom frame. No software or plug-in downloads are needed. The bottom frame is where the user types his or her request. After typing, they then click on the “发送 Ctrl+Enter” button in the small square to the right of the bottom frame. The upper frame is the co-browser which keeps the transcripts between the user and the librarian during the session.

Reference Librarians

All participating reference librarians are trained before they are selected for the real-time digital reference service. If the librarian passes the training, which is more focused on using the UCDRS system, a certificate will be issued to the librarian. From that moment on, he or she becomes eligible to provide reference assistance. These librarians are not only able to provide general reference services; but they also function as subject specialists in at least one particular field. To accommodate the users, each reference librarian rotates at this real-time digital reference desk. Most librarians are at the desk over thirty hours per week. If a librarian fails to find the answer to the user’s question, he or she have the option to refer their user to another librarian. If the question is not answered within 24 hours, it will appear on the homepage and be given an alert to the reference librarian group so that they can respond to the un-answered question as soon as possible. The participating reference librarians need the user’s name and password in order to log-on and respond to their reference question. Librarians can do this from the homepage by clicking on “管理者登入 administrator log-on” as shown in Figure 7:

After log-on, the librarian will then be provided with a platform upon which they can view the latest notices, read messages left by the users and other librarians, and view the reference statistics, such as the number of new articles updated to databases as well as the number of document deliveries (Figure 8).

Futher Discussions and Conclusions

According to Lessick (2000), users’ enquiries at the reference desk are declining while digital references are gaining considerable attention. Collaborated real-time digital reference service was introduced in China in the beginning of 21st century. The UCDRS system, as the most visited online reference service system in China, provides a convenient way for patrons to gain access to information and help. The databases are available 24/7. In the event that there is no reference librarian online, patrons can leave messages and expect to have answers provided within 24 hours. The shared windows allow patrons to see
what the librarian is doing, thereby giving them the opportunity to visit sites such as authenticated databases that they would not otherwise have been allowed access. Transcripts of the sessions are provided to patrons so that they can revisit URLs that were shown during their online reference session. Statistics and online evaluations have shown the effectiveness of this collaborated real-time digital reference service and how it was greatly appreciated by its users. The easy-to-use interface makes it simple for users to rapidly locate appropriate databases and resources. Since no software or plug-in download is needed, it is very convenient for both librarians and users to gain access. The elimination of needing a password further facilitates the user’s experience with the online reference.

Figure 1  “Search Engine” Page

Figure 2  User’s Search Result Page
Figure 3  User’s Search Result Selection Page

Figure 4  UCDRS Homepage

Figure 5  Un-answered Question & Answered Question Frame
Figure 6  Librarian/User Real-time Communication Shared Browser

Figure 7  Librarian/Administrator Log-on Page

Figure 8  Librarian’s Platform
References


