

COMPUTING AIDS WITH POTENTIAL APPLICATIONS IN TELECOMMUTING: LOCAL DEVELOPMENTS IN SERIALS CATALOGING

Change is nothing new to the serials cataloger. Changes in titles and frequencies are all too common in the physical manifestations of many serials. Discrepancies in numberings are almost to be expected, and challenges to the cataloging rules are frequent as titles present new twists to interpreting Anglo-American Cataloging Rules, 2nd edition, 1988 revision (AACR2R). However, the biggest change of late, is the carrier of the resources available to serials catalogers to help do the work. The development of the cataloger's workstation and its connection to the Internet have expanded the serials cataloger's work resources beyond the local desk and reference shelves to the world-wide cooperative ventures through telecomputing. This article describes telecomputing as the use of an Internet browser and some locally developed technological applications through a Local Area Network (LAN) accessed through the cataloger's workstation that provide seamless links to cataloging resources and communications' options. Although the catalogers at Northwestern University Library (NUL), Evanston, Illinois, have not yet experimented with telecommuting to work, the applications described would greatly enhance cataloging processes from a remote location.

INCORPORATING TECHNOLOGY IN THE CATALOGING PROCESS

The approach of providing access to electronic materials as end products, such as, electronic journals, interactive multimedia, and online full texts, has been developed to aid in the collection and organization of these materials. By optimizing the functions of the workstation, the serials cataloger may: use online cataloging tools, e.g., the Catalogers Desktop which has the Library of Congress Rule Interpretations (LCRI) and the CONSER Editing Guide among other things; have a direct link to online documentation of cataloging policies and procedures developed at other institutions; search other libraries' online catalogs; and, access online dictionaries and almanacs. The cataloger may also post a question to a listserv, such as, InterCat and Serialst, to query those with expertise or more direct experience with a cataloging problem. Other resources, however, may be developed locally and shared with catalogers on the LAN.

Incorporating these electronic resources into the work of serials catalogers helps them adjust to the changing cataloging environment and materials. Development of the workstation has expanded the scope of catalogers' sources of references while at the same time making the access to these sources more efficient. Telecomputing reduces the time of travel, whether the travel is to the Reference Room to look up a term in a Danish dictionary, or, most definitely, the travel is to the Kongelige Bibliotek (Denmark) to verify information on a serial title. Even to research questions locally, the network browsers have maintained a reliable and fast response time, making the use of the workstation more convenient and almost as fast as walking across the room to check a shared manual of information. One major benefit of telecomputing is the spirit of cooperation and sharing evident at so many institutions. The wealth of cataloging information sources is only made possible through the generosity and labor intensive efforts of many institutions who make their cataloging resources available on the Internet. Telecomputing is benefitting the cataloging community as a whole, bringing the community closer together rather than making it more isolated and regional. The listservs, in particular, are a friendly source of discussion that allows direct feedback on specific or general questions about serials cataloging. NUL is fortunate to have available the technical resources and support to not only use electronic sources, both local and distant, but to also help develop them and make them available to all serials catalogers.

LOCAL USE OF TECHNOLOGY

In the past few years, the Serials Cataloging Section at NUL, like the rest of the Technical Services staff, has experienced tremendous changes in its daily operations. By early 1995, all the catalogers (2.5 professionals and 1 FTE paraprofessional) received workstations (IBM 433DX and 486 SLG2) with LAN connections using Novell Netware. The catalogers have ready access to a variety of programs that include NOTIS (using Microsoft Windows environment via TCP3270 terminal emulator), OCLC Prism, LC Cataloger's Desktop (CD), CLARR (a cataloger's toolkit which derives its name from the "clar" function of claiming an LC authority record on the NOTIS system provided by the LC tape load), Netscape, HTML Assist, WordPerfect, WSGopher, Meeting Maker, and Eudora (an electronic mail program). Telecomputing, therefore, has become an inseparable part of serials cataloging activities.

When working in the NOTIS environment, the serials catalogers are able to incorporate into their cataloging the advantages of the Windows operating system, such as, cut and paste, multitasking, and use of macros based on their individual needs. Instead of making printouts and keying repeatedly, the catalogers use the cut and paste feature to create headings, make 7xx linking fields, and move holding statements. Cut and paste has helped catalogers to create and revise records with greater accuracy, ease, and speed. There are certain components in serials cataloging that are repetitive and time-consuming. Linking a large number of item records, or moving a long holdings statement can sometimes be tedious and labor-intensive. The built-in Windows capabilities, such as, the macro editor, keyboard mapping, and Poppad, provide many possibilities for the catalogers to reduce repetition and increase productivity. For example, catalogers can now create a macro for relinking item records that automatically completes the process. Others have created macros for inputting parts of a holdings statement into the holdings record. When the cataloger positions the cursor on the screen, the machine inputs "867:41:a" or "|z (unbound)" at the touch of a button. The multitasking capability of Windows is perhaps one

of the most powerful tools. The key combination of "ALT" and "TAB", used to toggle from one application to another, has made switching between programs on the LAN fast and easy. Catalogers often keep multiple applications running simultaneously for the day, including OCLC, NOTIS, CLARR, LC CD, Netscape, and Eudora. They perform copy and original cataloging on NOTIS and OCLC and may do most of the investigation and information gathering from other online resources. Some catalogers prefer to consult the online Library of Congress Rule Interpretations (LCRI) over the print version because of its search capability and timeliness, especially with its latest addition of "What's new". In addition to taking advantage of all these cataloging tools on the LAN, the catalogers also compile monthly statistics on the workstation using the QuattroPro spreadsheet program.

Internet has made serials catalogers' access to information go far beyond the boundary of the institution, the region and the nation. The Serials Cataloging Section's Home Page (www.library.nwu.edu/sas/sercathp.html) was officially up on the Web in Sept. 1995. The home page incorporates not only Internet resources on serials cataloging, but also local resources including Serials Cataloging procedures, Interactive Electronic Serials Cataloging Aid (IESCA, a locally developed cataloging training tool), and the Standards for Holdings Statement. Existing print cataloging procedures are continuously being revised and converted to web pages by the Head of the Section. Catalogers, therefore, have the option of referring to either the print or the web versions when questions arise. Updated by catalogers, the Section's home page is a growing entity. New sites are being evaluated and added to the page in hopes of making it a viable tool for the serials community. The Section also benefits from home pages of other organizations. For example, the Invoice/Binding Assistant often uses Netscape to access publishers' home pages (sometimes the URL is provided on the piece) in order to obtain useful information for binding decisions. When a cataloger had problems gathering sufficient information on an early 20th century Danish publication (i.e., I morgen), she telneted to the Kongelige Bibliotek (Denmark) through its Web page. Not finding relevant information about the title in that remote library's OPAC, the cataloger, with the help of a reference librarian of Danish origin at NUL, was finally able to obtain relevant information through electronic mail from a librarian in Denmark within a few days.

Most of the catalogers subscribe to different professional listservs, such as Serialst, InterCat, and Autocat. The listserv has become a vehicle for information exchange and mutual assistance among catalogers of the world. Catalogers at NUL use the listserv not only to post questions, but also, to suggest answers or help to others. When LC decided to use "--Periodicals" (form division) rather than "--Databases" (form division) for computer file serials, catalogers obtained the information through Serialst and forwarded it to the appropriate authority. In a timely fashion, a decision was made and NUL began to follow LC practice.

TWO APPLICATIONS DEVELOPED AT NUL - CLARR and IESCA

Serials catalogers at NUL are very fortunate to have the opportunity to use CLARR in cataloging. CLARR has been developed and is revised as needed by the NUL Authorities Librarian, Gary Strawn. Some catalogers include CLARR in the Startup Group when they launch Windows every day as it has become an integral part of cataloging on NOTIS. CLARR is a terrific example of library automation. In Gary Strawn's own words, "...

CLARR is simply an extremely fast and accurate typist. CLARR uses its connection to NOTIS to simulate actions you would normally perform--entering a command, inspecting the result, and taking the next appropriate step. CLARR's advantage is that it is able to do these tasks more rapidly and consistently than is otherwise possible ..." (For more information on CLARR, please visit the NUL Cataloging Dept.'s web site at [http://www.library.nwu.edu/clarr/.](http://www.library.nwu.edu/clarr/)) The CLARR toolkit is a collection of fifty-four buttons with pictures and letters, each performing a distinct function. For example, the button NAR (New Authority Record) creates an authority record from any field in a bibliographic record that is under authority control (i.e., 1xx, 4xx, 6xx, 7xx, and 8xx). To create an authority record for a bibliographic heading, the cataloger clicks the cursor anywhere on the heading and then clicks on the NAR button. CLARR extracts and disassembles the field in the same manner it does for full-record verification, and searches each of the pieces with an emphasis on duplicate established headings and conflicts with see references. If there are no problems, CLARR returns a dialog box with options on the screen, such as, corporate name, series traced, and series not traced. If, for example, the cataloger selects "series traced", CLARR automatically creates a series authority record in seconds. Due to the special nature of series, serials catalogers sometimes need to make minor revisions for fields 644, 645, 646 and 670. The button Fi (Find) searches the corresponding bibliographic, authority, copy holding, item record, or call number indexes. Catalogers simply click the cursor on the field they wish to search, then click the Fi button. Fi calls up an index display for inspection. The problem of duplicate headings or call numbers are thus alleviated. The CLARR Mail button is another powerful tool that has revolutionized the way people communicate at work. It sends the NOTIS screen(s) as an e-mail message to another party. Clicking on the Mail button when in a NOTIS record brings up a dialog box in which the cataloger may add new e-mail addresses, select how many copies are to be sent, or write a brief message. After most of the catalogers switch to this means of communication, they come to realize that it not only saves paper and time, but that they actually tend to receive more prompt responses as people are reluctant to leave electronic mail unattended to clutter up their mailboxes.

THE NEED FOR IESCA

The idea to create IESCA came out of the increasing popularity of the Internet as more and more categories of electronic resources became available on the Web. There are online public access catalogs (OPACs), bulletin boards, mailing list servers, discussion groups and some full-text databases. What is the best approach to organize these resources so that users may find the information in a timely manner? Cataloging the database resources in USMARC is a more traditional bibliographic control approach that would be helpful in leading researchers and reference queries to the Internet sources in a direct manner. Cataloging the Internet resources, then, is a task to be undertaken methodically. Agreeing upon what rules to follow in cataloging such resources is not an easy task. The USMARC Advisory Group is making progress in compiling a list of field identifiers for a bibliographic description of a network file, especially in describing the special attributes of the file, although questions still remain as to the adequacy of such descriptions. Will the descriptions of today be adequate for tomorrow's networks? The USMARC format is a good preliminary outline, but will be more useful if it includes hypertext fields that directly link the user to Internet objects. At this point, the user should be able to highlight or

otherwise select fields in the catalog record for automatic search of the network, or at least be able to save fields to a buffer on the microprocessor of the catalog being searched to be used forthwith as a search of the network. There are systems being developed to perform these functions.

DEVELOPMENT OF IESCA

IESCA (<http://www.library.nwu.edu/iesca/>) was developed to aid serials catalogers in cataloging electronic serials on the Internet. This tool primarily provides ready access to cataloging rules, rule interpretations, examples of USMARC bibliographic records in serial and computer file formats, and a glossary of cataloging and computer terminology from any remote location. All these areas are cross-referenced through hyperlinks to provide related information. By providing the MARBI Proposal 95-1, Library of Congress' Guidelines for the Use of Field 856 (which effectively outlines the use of the new MARC field 856 (Electronic Location and Access)), ten examples each of MARC serials and computer file formats with corresponding (10) examples of the object on the Internet, and a glossary of cataloging and computer terminology, IESCA aims to help the cataloger identify new descriptive features of the Internet object and to apply new MARC codes to them. The training tool content concentrates on the new MARC fields dealing with Internet objects (i.e. 008, 516 and 856) with links to cataloging documentation and examples, thus providing guidance to catalogers with an unfamiliar format.

The designers, two serials catalogers at NUL, met in June 1994 to discuss working on a project. At that time, there was a lack of information on how to handle cataloging of serial Internet objects. The catalogers decided to accept the challenge of working on filling this gap and contribute to the field by designing a training tool for serials catalogers that would be accessible over the Internet via Mosaic. The designers had very little computer expertise. One of the designers had completed a preliminary course in making documents to be viewed through a browser, and the other designer was a complete novice. As the project progressed, the Netscape browser became available to the public. Netscape was chosen as the Web browser for the project for its advanced capabilities. The project was designed to be used on a PC with a mouse and a color monitor. Basic familiarity with this type of equipment by the user was assumed.

At first, the designers spent time on working out a "blueprint" for the project which grew out of questions they posed. Who will be the users of the tool? What will be the content coverage? How will the content be organized in a meaningful way? After the designers agreed upon a draft plan, they held several meetings with the Library's computer specialists to seek advice on the best way to deliver such a project. As they were advised to concentrate on gathering and preparing the actual data in computer files before putting them in HTML (Hypertext Markup Language) files, the designers began an intensive search for relevant materials. The documentation included guidelines and proposals available at the time, such as, the OCLC Internet Project and the MARBI Proposal no. 94-9. Actual Internet objects included ejournal titles, e.g., those included in CICnet (Committee on Institutional Cooperation network). The data gathering period lasted several months longer than expected as the designers found out that some documents had no electronic versions, and some were not usable as permissions were not granted from the publishers. To obtain the planned twenty ejournal titles (divided into the four categories of

newsletter, bulletin, digest and journal) also turned out to be complex. Although there are reference sources available on electronic journals and how to access them, they tend to be outdated rather quickly. The sites were often no longer accessible, or the ejournals had ceased publication. Eventually the designers decided to give up the plan of selecting a balanced combination of titles with examples of different languages, subjects, and title changes. Selected titles were those that appeared to be stable, or those which the designers had downloaded copies.

After the designers had gathered most of the data, they were going to scan some written documents to save time with typing. They soon discovered, however, that it was very cumbersome to make these scans manipulatable to include hyperlinks to other documents and areas within a document. Some files that were available via ftp were downloaded and manipulated into usable text for inclusion in the project. Two examples of these are the OCLC Research Report Appendix files (used in the initial construction of IESCA) and the MARBI documents. Other files were compiled by typing the information into a new file using the HTML editor. Some of the documents received via ftp were left in their original form as much as possible with the addition of bold-face type and minor respacing for easier reading in Netscape. A few of the files are very large, e.g., the USMARC Descriptive Fields, and the Library of Congress Guidelines on the Use of the 856 Field. The USMARC file was segmented to make it quicker in its loading into Netscape and to prevent local PCS from running out of memory when loading the file in its entirety.

The next step for the designers was to learn how to create HTML files. BBedit on a Macintosh was then the most popular HTML editor that was available. Having no previous experience with HTML editing, the designers completed tutorials in BBedit and went through a period of trial and error before they became comfortable with the HTML codes. After this initial phase, the project proceeded quickly and smoothly, and the designers were able to easily manipulate changes to the organization of the tool.

Design issues for the structure and layout of IESCA were some of the more difficult decisions the designers had to make during the process. Although the tool is basically comprised of four modules (Examples, Rules, Glossary and Useful Sources), each with its supporting layers, the tool was designed to follow a non-linear approach that allows the user to start a search at any given point. It was the hope of the designers that as users of IESCA became more familiar with it, they would be more likely to go to their destination through a more direct route rather than the step-by-step methods used when first browsing. Basic instruction on the use of IESCA can be found on the project's home page. Design modifications were made throughout the composition of the project as style decisions became more clear, and the advice of a technical expert on WWW pages was taken to heart.

The designers solicited comments from serial catalogers and non-cataloging librarians during the final stages of composition of the project. During a shake-down presentation, one major deficit in the project was brought to light. Despite the non-linear approach to the documents, it was made clear that being able to search the project with keywords would be most desirable. A search engine was then added to the IESCA home page. The designers also created a Form Interface for comments and suggestions.

Currently, the designers spend time as appropriate to forthcoming cataloging standards, reviewing IESCA and making changes so that it will remain a viable tool. Overall, the designers collectively spent an average of eight hours per week (time spent progressed on a diminishing scale from about three times as many hours in the beginning as compared with the end of the project) over the course of twelve months in bringing IESCA to a Web reality for catalogers around the world to use.

GOING FORWARD

What will the future look like? No one is able to tell as we are trying to aim at a target which is moving with such remarkable speed. There are, however, certain trends in the area of technical services which may shed some light on the directions libraries are taking. Faced with shrinking budgets and a greater demand for the timely processing of materials, librarians have to exploit and rely more heavily on computer-assisted applications and programs. There will be more refined online services and programs provided by vendors and publishers. Librarians will be able to conduct online interactive manipulation of data for ordering, claiming, invoicing and cataloging at a lower cost from remote locations. Telecomputing plays an increasingly important role in information retrieval and processing. It is an exciting time for librarians to experience and witness the dramatic changes taking place in the information community which are brought about by technology. The telecomputing technology may make it possible to free Technical Services personnel from rigid schedules of completing their tasks at only one, centralized office by allowing them to telecommute from home or other remote locations.

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