Rencana-Rencana/*Articles*

Library Automation: A User's View

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Abstrak: *Artikel ini merupakan pengalaman penulis dalam penggunaan komputer di Perpustakaan, California State University, Chico, yang telah melaksanakan sistemnya tiga tahun lalu. Walaupun beliau mengakui bahawa sistem berkomputer seperti sistem yang terdapat di Chico bermanfaat dari segi: menjimatkan masa pencarian maklumat, berupaya mengendalikan pencarian maklumat secara mendalam, selesa dan mudah-akses, menjimatkan kos fotokopi, mengelakkan menyalin nota dari monitor, dan kekinian pangkalan data; beliau juga berpendapat bahawa masih terdapat beberapa kelemahan dan kekurangan yang perlu diatasi sebelum sistem berkomputer dapat digunakan dengan penuh berkesan.*

Abstract: *This article provides a personal insight into the computerisation of the California State University Library at Chico, based on the writer's own 'encounter' with online processes. While acknowledging that for him computerisation has several advantages, namely: saving of search time, capability in undertaking in-depth search, convenience and accessibility, saving of photocopying costs/tedium of making notes from monitor, and 'up-to-dateness' of database; he also feels that there are flaws and defects that need to be corrected before computer technology can be fully appreciated.*

When students and faculty of the California State University, Chico, returned from their summer vacation three years ago, they noticed that the card catalogue of their library had disappeared from the information service area. The space once occupied by the card catalogue was newly installed with computer terminals, computer output microform (COM) catalogues, and microfiche readers. As the confused users started to ask their "directional reference question"[1] "Where is our card catalogue?", "It has been moved to the third floor (top floor) behind the book shelves," replied the reference librarians, somewhat apologetically, and supplemented their replies occasionally with an explanatory remark that the card catalogue had not been updated for some time, and that the online catalogue would be more current for accessing the library's collection.

The above-mentioned changes in the library of the California State University, Chico, are reflective of some of the common scenes in many academic and research libraries in the United States during the last decade. According to Marcum and Boss, at the beginning of the

1980's, over 3,000 libraries used a bibliographic utility for catalogues, some 450 libraries had automated circulation control systems, and more than 150 libraries had installed automated monographic acquisitions systems.[2] The improvements in modern computer technology have helped libraries advance to "the era of the online catalogue" and offer a whole new spectrum of information services.

User reactions towards these changes in the California State University, Chico, were mixed. The old friends of the card catalogue were willing to make the extra effort to travel up to the third floor to get help from their old helper while others were "red hot" to try the "high-tech" gadgets of the online catalogue terminals. Studies and experiences of libraries have revealed that online catalogues indeed stimulate library use.[3,4]

As one of the users, I would like to summarise my own experience in the wonderland of an automated library. This personal encounter with online acquisitions, online catalogue, circulation control systems, online search, and automated serials control systems has been a very reward-

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ing experience with a mixture of some frustrations and occasional disappointments. Thus, my discussions represent a user's view of the strength of automated library systems in comparison with a traditional system with some suggestions for potential improvements for a real or an ideal automated library environment.

First of all, the speed of searching is undoubtedly the biggest advantage of automated library systems. Computers can process information more rapidly than humans and therefore help reduce time for a search. As a result, ever since automated library systems were installed in the library of the California State University, Chico, I have been able to complete my library searches in much less time than I did before. Hoover acknowledged that online information services "dramatically reduce the search time you must spend to acquire it by traditional means."[5] According to Katz, various studies indicate that "a computer search may be performed in 5 to 10 percent of the time required for a manual search."[6] For example, using the online VU/TEXT, a user was able to search through thousands of full-text articles in 26 newspapers in only 1 minute and 26 seconds.[7] More studies and experiences are available to confirm that time saving is the greatest benefit to users of an automated library system.

Another advantage of automated library system is its capability in undertaking an indepth search by using Boolean logic. "Boolean logic when used in retrieval systems functions on logical certainty in that a term is either present or not. This unambiguous yes or no approach is well suited to computer manipulation".[8] Three Boolean operators (or logical operators) are available in the Boolean logic namely AND, OR, and NOT. They function as follows:[9]

AND: would retrieve a record only if it was indexed under all terms thus connected.

NOT: would retrieve a record only if it was indexed under the first search term but not under the second.

OR: would retrieve any record in the database indexed with any of the terms so connected.

As an example, to search a *Chicago Tribune* story on a store owner who booby trapped his store with an electronic device that killed a thief who was trying to rob the store, the searcher used the Boolean operator AND to connect two key words **booby** and **store**. Thus, the computer searched through all articles that contained the words **booby** and **store**.[10] Searching in online public access catalogues (OPACs), catalogue users can apply the same method in a keyboard search by authors, subjects, titles, all categories, and call numbers, but they will never be able to thumb through card catalogues using the same Boolean operators. Using the Boolean operator OR users will be able to carry out a thorough search on a specific topic by retrieving all related records. On the other hand, one can narrow the search further by using the Boolean operator AND.

Convenience is another advantage of automated library systems which benefits users tremendously. As Katz once described, "A terminal is all that is needed, and one need not go from reference work to reference work, volume to volume, on different floors, and in different places in the library."[11] Nowadays, with a modem, a library patron can have remote access to a library's online catalogue. For example, through a second phone line located at home, I can use my PC computer and a 1200 baud modem to log in the online catalogue of the library at the California State University, Chico. Thus, I have been able to use the library's online catalogue whenever I needed a search during the library hours. As a result, it has saved me a great deal of time from making trips to the library. I can also get access to any OPAC that "can easily be accessed by users from their homes and offices via dial access."[12]

Another convenience resulting from automation is the provision of circulation information. From a circulation system's subfield called 'status', users will be able to tell whether a book is on the shelf or has been checked out. When a book is not showing 'on shelf' a due-date will be displayed below the column entitled 'status'. From the terminal screen, users will be able to tell whether or not the book is available. Thus, it allows the users to continue their search if most of the books needed have already been checked out. Unnecessary trips to stack areas are saved and the overall search time is shortened.

A hard copy produced from the computer-based search is yet another asset to library users today as it saves them a great deal

of time and photocopying costs. Printers connected to the PC computers or terminals will automatically print out hard copies of texts displayed on the monitor screens when users type in the screen-print command. I have saved time from copying information from the monitor and used fewer index cards and notepads. Katz has expressed his observation in this way: "As most searches end with a printed-out list of citations, the computer eliminates the necessity for painful and time-consuming copying of information from printed sources. It even cancels out the necessity for xeroxing or otherwise automatically copy data."[13]

Currency and 'up-to-dateness' of databases is another major advantage of automated library systems. For example, *The New York Times Index* database is updated daily and weekly online. Users are able to access the database online a mere four hours after the actual news occurred, rather than waiting for two to three months for a printed version. It is even faster in today's business world. According to Hoover, "Online information services can help you keep up with what's happening in the business world almost as it occurs. News and stock exchange wires, for example, appear online within 15 to 90 minutes."[14] For this exact reason users will rely heavily on online databases when searching for current information.

Notwithstanding the above-mentioned 'strengths' of automated library systems, there are still some flaws or inconveniences which need improvement. They are by no means perennial problems and may have already been corrected in the newer systems. As a user, I shall identify only those frustrations which I have personally encountered during my searches.

A source of frustration in using automated systems is frequently caused by an unscheduled downtime. Users often complain about it, even librarians do likewise if the system is having excessive downtime. "The computer is down again!" is a common expression of the users. What can you do about it? Perhaps kick the computer if you can get into the tightly guarded computer room! Assistants at the circulation desk dislike it because it takes more time to complete a manual checkout form than to employ barcodes and barcode scanners (light pens) to read and record loan information as items are charged to library patrons. The manual method entails filling up a `Manual Charging' Form and for this purpose three numbers are needed - the zebra number (barcode) from the back of the user's university identification card, the book's zebra number found inside the back cover of the book, and the call number of the book found in the back of the book. These details will subsequently be entered online.

There are many reasons that cause a computer to stop working, one of which is the room temperature. While a specification that libraries are often able to incorporate into their contracts with turnkey system vendors is a 'guaranteed' 98 percent system uptime, 2 percent downtime would still mean a lot if the library computer is run for many hours or on a 24-hour basis.

Furthermore, downtime as defined in many contracts refers only to the downtime of the central processing unit (CPU). Other localized downtime will occur when individual terminals are malfunctioning or when there are problems with telecommunication lines.[15]

User's unfamiliarity with the Anglo-American Cataloguing Rules, Second Edition (AACR2) would likely be another factor causing confusion and frustration. How many library users know or remember the AACR2 rules regarding the requirements of spacing? "Leave one space after all commas ..." it says.[16,17] Thus, the space after the comma and before the first name of a main entry is very crucial during an `author' search. Omitting a space before the first name of an author would render library users helpless and unable to locate the author's name. Quite often users are not aware as to why they have failed to locate the authors they seek. Instead, they must have assumed that the library does not have the books that are required.

Due to several constraints, mainly technical, time and financial, libraries frequently might not be able to complete their retrospective conversions at one go. As a result, these libraries frequently end up with more than one format of catalogue -- card catalogue, COM catalogue and online catalogue standing side by side. It is even possible to find an online catalogue that has been further divided, depending on how sophisticated each system is. These formats are most often divided and identified by the date of publication of materials they record. For

example, the remote accessible Catalog Plus (an OPAC) at the California State University, Chico, is only for those titles published after a certain date (1984?). Without a clearly written instruction or online 'help' information, users could easily get lost at the terminal area of the library or in front of their own computer terminals.

Inaccessibility is a flaw of online reference services regardless of the computer's capability in providing information speedily. This arises mainly from the exorbitant costs of accessing commercial databases and the costs of linking the local terminal to the database by a long-distance call which often costs "as much as US$30 per hour".[18] Many libraries will share a portion of the online search costs with their users while others will not. In any case, library users do not actually carry out their searches themselves; instead, they delegate their searches to reference librarians or others who are knowledgeable about online searches. Users only provide the clues and key words of the topic sought and pay the costs regardless of the results. Once the contact is made, the cost is levied. Users may never have a hands-on experience at all, because only the authorised librarians are allowed to undertake online searches. These librarian-oriented searches could cause a severe backlog in a research-oriented library even if this problem has already been identified in its "need analysis"[19] as one of the problem areas needing automation.

The development of CD-ROM helps solve the above-mentioned problem of inaccessibility of online reference services. Using microcomputers and CD-ROM technology, users can virtually carry out conventional online searches within the library, free of charge. Unfortunately, libraries have to purchase and pay the initial cost of the CD-ROM database(s) first. It seems that library users have finally won a battle of the 'fee versus free' controversy with respect to online searching. For example, the ERIC database which is one of the least expensive databases of DIALOG has in the past charged approximately US$25 per hour for online searches, but recently its CD-ROM version costs over US$2,000. Libraries have to purchase not only the disks but also the compact-disk player, monitor and printer while users are able to do their searches without worrying about the per hour rate of database fee and the tele-communication costs.

This solution to the fee problem, however, has not completely solved the inaccessibility problem once and for all. As of now, ERIC CD-ROM is operating only at one work-station. Therefore, the queue line is long and users frequently have to rush their searches because each user at the California State University, Chico, is limited to 30 minutes. The InfoTrac database of the same university was the first CD-ROM purchased and has four patron access stations. It has been heavily used by students and the queue lines are getting longer. Tenopir's study supports this user's observation and states that "waiting lines at InfoTrac workstations developed at several libraries, causing some to impose time limits of between 10 to 30 minutes,"[20] even though the Indiana Survey indicated that students were mostly able to complete their searches in ten to fifteen minutes.[21] Thus, the new policy of requesting users to limit searches to ten minutes at the California State University at Chico[22] will hopefully reduce the waiting lines without cutting short users' searches. One way of resolving the issue of the CD-ROM's limited accessibility would probably be through "the conversion of the single-user CD-ROM station to a multiuser station".[23]

Library automation has been in existence for some time. In an information-oriented society, libraries play a vital role in providing users their needed information. As Boss predicts, "by 1990, the majority of medium-sized and large libraries in North America will be automated; by the end of the century a majority of all but school libraries will have implemented systems ..."[24]. This user's views based on his experience and observation of library automation are probably similar to those of other users, using similar or different automated systems in other libraries. There are positive as well as negative aspects of library automation. There are flaws in library automation but in view of the rapid advances in computer technology, improvement is not impossible. As Dwyer points out, "Realistically, most libraries today cannot afford to make the online transition perfectly, but a clearer understanding of the true costs of online systems and the requirements of the library users will allow us to make intelligent tradeoffs and to plan for successive stages of development".[25] Information concerning the requirements of the library users

will not normally be available during the development and installation stages of an automated library system. Therefore, it is this user's belief that users' feedback is an important piece of information for planning and developing an automated library system. As information technology continues to advance, I am optimistic about the future.

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