
Unfolding the Mysteries of Aladdin: the Impact of an Integrated Online System on Catalog Operations

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In early 1983 J. Murrey Atkins Library of the University of North Carolina at Charlotte began planning for implementation of the VTLS system, known locally as Aladdin. Task forces were appointed with appropriate staff representation for specific implementation phases. The director also appointed the Implementation Group to guide and direct the overall system implementation based on the recommendations of the various task forces. The cataloging unit was well represented on all of the various groups, as two members of the unit served on the original selection committee. Therefore, the cataloging unit was well aware that major changes would influence the ways things were done. By June 1983, when the equipment was installed for the VTLS system, plans were being made for phases of implementation which would affect the functions of the cataloging operations. Over the next six years, many changes took place, some subtle and some not so subtle. What follows are observations of major impacts made by an online integrated system on cataloging operations and inferences drawn from these experiences.

Changes came about in cataloging operations over a period of approximately fifteen months. Basic cataloging activity was unchanged, as a dual operation was continued until January 1985. Cards were produced and filed in the card catalog until all tapes were loaded and all equipment and software had been adequately assessed. Meanwhile the pattern of workflow was under review. Training activity and documentation from VTLS suggested that the major impact would be on the bibliographic records maintenance functions.

In addition to the expected adjustments for everyday cataloging operations, the advent of "rolling conversion" (converting bibliographic records as the related items circulated) tumbled into the cataloging processes with a force not

unlike that of a runaway horse with an inexperienced rider. Funding and additional staffing had been provided for a two year period to give concentrated attention to shelflist conversion (converting bibliographic records as one moves through the shelflist catalog card by card). However, the move to implement the circulation functions online in the fall of 1984 without having thoroughly studied the impact of rolling conversion on cataloging operations meant that all planning and staffing for shelflist conversion had to shift emphasis to "rolling conversion." For the next two years, notices for conversion to machine-readable records arrived by the hundreds from the circulation unit. In the past year these receipts have dwindled to less than twenty per day. This experience was the first major example of the need for better communication and understanding of the impact that organizational decisions can have on two vital functions utilizing the same system. As has been indicated, workflow review established the need to rework various processes.

The inputting and editing of OCLC records has remained basically the same, with the addition of transferring the record from OCLC to Aladdin after the shelflist card is produced. The materials processing area has also seen some changes, but these have been minor compared to those in other areas. Because bibliographic records are searchable in Aladdin after the nightly buffer run, catalogers put only one day's books on each truck instead of filling the truck.

One of the first decisions made was to link the items at the end of all other cataloging processes. We knew that if an item was linked as soon as the bibliographic record appeared in the data base, but before the item was labeled and sent to the circulation unit to be shelved, users would find the record in Aladdin but be unable to locate the book on the shelf. (Library staff know a recent "date entered" on the MARC record means the item is still in cataloging.) During the linking pro-

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cess each title is searched in the system by the call number on the label. If the title is not found, additional steps are taken to determine if the item is mislabeled or if there is another problem. We still include date due slips, although the cataloging and circulation units have discussed discontinuing this. An alternative would be to put a dated slip in the book at the time of check-out. Even before Aladdin, we have been aware of the time spent placing date due slips in books which might never be checked out.

Shortly after the implementation of Aladdin, bibliographic maintenance, authority control, and OCLC editing and inputting functions absorbed staff members who were formerly involved in filing. Most staff in the cataloging support section search and edit on OCLC as well as on VTLS. This in itself demands a degree of flexibility and sophistication. They must know bibliographic as well as system requirements for both OCLC and VTLS.

The online system has increased our need for bibliographic maintenance. The more traditional kinds of maintenance, such as revisions to name and subject headings, conflicts in forms of entry, corrections of typographical errors, and call number changes, still exist in the online system. One difference is the ease with which most corrections can be made. The capability of global change reduces hours or even days of pulling, erasing, retyping, and refileing to minutes of online editing. These complexities have raised the overall level of staff expertise in bibliographic maintenance, since the same person often identifies the error, verifies the change, and is able to make the correction at the terminal. All staff in the cataloging support section making changes to bibliographic and authority records are expected to have a certain level of expertise with both the bibliographic and item information in the record and the MARC format. All edited records automatically move from the work area to the data base during the nightly buffer run. Unless records are specifically saved, there is no review except for the messages which may appear on the daily buffer report.

Many problems which seemed minor in a card catalog are more apparent in Aladdin. Discrepancies in capitalization, punctuation, diacritics, and birth/death dates are treated as different entries in VTLS. The buffer report notes possible duplications and staff intervention is then necessary to combine the entries. If this is not done, duplicate entries become part of the data base and no other reports are printed. The system will continue to display the entry in two (or more)

forms, however slight the difference. While conflicts may remain dormant in a card catalog with the record still available to the user, conflicts in authority and bibliographic records remain in the buffer until the problem has been corrected. Until then the complete record does not appear in the data base, and it is inaccessible to users. Thus, the record is not available until bibliographic maintenance has cleared all records.

All bibliographic control staff must be alert to searching techniques and how these affect cataloging. These techniques may sometimes conflict with the requirements of the Library of Congress system. Title added entries have demanded a great deal of attention. Abbreviations, symbols, numbers, and spaces may all need additional title added entries in order to facilitate searching. In our public catalog titles beginning with the words "labor" and "labour" are interfiled. In Aladdin, title added entries must be generated if it is suspected that users may search differently. In other cases entries may have to be deleted. Current LC cataloging often includes a title added entry which is identical to the record's uniform title. If the added entry is not deleted, Aladdin will display two hits on the same record. A title such as "3 [trois] freres" would have been searched exactly as written. Title added entries would be added for "3 freres" and "Trois freres." Most of this is done by the bibliographic control staff when incoming shelflist cards are reviewed. An old problem which still exists in earlier records is caused by the lack of filing indicators in author/title added entries. Titles which begin with non-filing articles have to be searched by those articles. While this is not a problem with current cataloging, retrospective conversion records may still contain these entries.

The library staff, in general, and catalogers, in particular, remain a major source of notification for conflicts. They continue to send notes as well as print-outs from Aladdin to report changes but many also utilize a quick and easy feature of the system called the /TELL command. It enables staff to send messages through the Aladdin terminals to report possible bibliographic and systems errors and/or problems. These messages are printed on the next daily buffer report. The potential for more information will grow as additional users are introduced to this feature. Incoming shelflist cards are reviewed as part of the authority process. This activity alerts the bibliographic control staff to many potential problems. The transfer and editing of authority records also contributes to the identification of errors, as does the maintenance process itself. The catalog maintenance librarian reviews daily buffer reports

which the system generates from bibliographic and authority records being transferred from the buffer to the database. These reports do more than identify conflicts and possible duplications in the system. The buffer report program has been set so that it also prints out any headings which do not have MARC authority records. From our experience, the librarian's overview of the reports serves a useful purpose.

The transfer of all name authority records causes growing maintenance problems. There are increasing numbers of conflicts between current, in-coming bibliographic records and full MARC authority records already in Aladdin. When these conflicts appear on the buffer report, the normal practice is to change the entry on the in-coming bibliographic record. This eliminates the conflict with the cross reference and releases the bibliographic record from the buffer. Experience has shown that the problem is usually created because the heading has been revised so the next step is to check the authority record in OCLC. The revised authority record is transferred to Aladdin, and all occurrences of the name are changed with a global command. The in-coming record totally replaces the existing one, including our locally edited references and notes. An added problem is that VTLS does not have the capability of deleting full authority records once all attached bibliographic records have been deleted (withdrawals, etc.). These records remain in the system to frustrate users since the displayed message is "No bibliographic records." Bibliographic control staff can delete these records if notified.

Various uses of the authority record and

accompanying referral screens have been tried. The ability of the system to suppress a reference is helpful in authority control. The most common use of this feature is to record an old heading for future use in bibliographic control but without cluttering author and subject displays. On the VTLS referral screen, the cross reference displays with a message that the term is not used and to enter instead the line number of the term displayed at the end of the message. The heading with its subdivisions is not displayed; the user can miss several menu screens of appropriate entries. We have yet to determine the best method of providing authority records for entries which only have subdivisions.

Subject authority control in our library has been limited to creating authority records for major changes to subject headings, mainly those listed in the cataloging service bulletins. Cross references have sometimes been added for periodic phrase subdivisions since the computer filing arrangement is alphabetical rather than chronological. The display of scope notes for users trying to decide among two or three subject headings may also prove useful.

Barcodes are a new dimension. They can be, and are, removed by students. The reverse of this problem is that sometimes extra barcodes are found. Occasionally the barcode may be applied in the wrong area and another one added later. Double barcodes, used only with items in retrospective conversion, are sometimes confused with single barcodes which are used for new receipts. One solution was to limit the number of library staff allowed to replenish units' supplies of bar-

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The placement of the barcode in the volume has received considerable discussion and study. Its present location is center top of the inside back cover, where it is anticipated that it will not become damaged as quickly as in the old location of upper right corner of the back cover. Because item numbers can be linked to only one bibliographic record in Aladdin, the barcoding and linking of "Bound With" items is a second, on-going concern. We barcode and link the first title in the volume and add only the eye-readable portion of barcodes for the other titles so they can be linked to their appropriate bibliographic records. A status code identifies these as several titles bound together, but the cryptic message tells the user little else. It also causes problems for circulation when the volume is overdue because each item number is checked out and is therefore overdue. An alternative which we explored was to use only one barcode in the volume and link only the first title to its bibliographic record. A status code identified the other titles as parts of a bound together volume but because they were not linked, there was no circulation information for these titles. VTLS will be adding a free text line to the item screen beginning with the next release which may give us more flexibility in this area.

We have become especially cautious with bindery books. The book cover, with the barcode, is removed and discarded by the binder. If the barcode is removed and the item information deleted before the volume is sent to the bindery, staff and users have no way of locating the volume. In order to delete the old information after the volume has been returned, in-house bindery staff must photocopy each barcode (it is more accurate than hand copying) and tape it to the bindery slip. After the volume is returned from the bindery and has been relabeled, the old barcode number is retrieved in the system, deleted, and the volume linked to a new barcode number.

Adding holdings records for monographs uses only the free text field. After the MARC holdings record became available, VTLS mapped over our old records based on their programs. A serials pilot project enabled us to determine the necessary level of holdings, phraseology for notes, etc. but did not answer all our questions. Should bound periodicals be barcoded and linked? They do not circulate but the information must be in the system if Aladdin is to be used for inventory control. Should each piece of microfiche or microfilm be barcoded as well? Should individual AV

pieces be barcoded? Each answer raises more questions which will need to be addressed through collaborative efforts with other areas of the library.

While there is the need to combine automation and cataloging functions in an online integrated system, there is also the need to blend cataloging functions more closely with those in circulation and public access. The immediacy with which information is available to all users creates a certain urgency to it that cataloging staff have not experienced with manual processes. Once a bibliographic record is entered into the system, it is visible the next day to all users, while the item and holdings information is available from the time of entry. The experience with rolling conversion made the staff involved with circulation and cataloging functions aware of the need for allowing enough lead time to deal with unforeseen and unanticipated results. The labor intensive practices of a manual system had built in time for adjustments to changes in cataloging or circulation practices. Where the automated system produces immediate results, the impact can have dramatic psychological repercussions. For staff to be prepared for the anticipated implementation of various related functions, it may be necessary to develop broader perspectives on library operations and services.

Basic adjustments for the public services staff would seem to be minimal. The online bibliographic record is displayed in the same basic format used on a card. However, searching capabilities and display features of the online catalog are very different from the card catalog. The advantage of call number and key word searching capabilities are additional positive access enhancements available in online systems. A knowledge of the MARC format and machine-readable records can aid the staff in public services with interpreting online displays. Various approaches have been used to inform the reference staff of changes the online catalog may present for the reference functions. From time to time informal instructional sessions with the reference unit staff on various features of the online catalog have been conducted by appropriate members of the cataloging unit. At other times the installation of new software releases, such as key-word searching and the MARC holdings format, has provided opportunities for cataloging staff to make formal presentations to all public services and technical services staff.

The pre-order searching activity has shifted primarily to searching in the online system and minimal searching activity is performed at the

card catalog. This has fostered greater familiarity with the MARC format, and the searching capabilities in an online catalog environment have also raised the consciousness of these technical services staff to the cataloging functions. The result is the increased feedback on records already in the system and the provision of additional background information for cataloging purposes. That had not been the custom with a manual catalog. The online catalog also provided the opportunity to utilize staff in acquisitions to input brief records for a transitory collection where titles remain for a short period of time. This transfer of activity to acquisitions required basic training in cataloging techniques and practices by cataloging staff. It has not been accomplished without some drawbacks, in particular the development of authority records for these brief records. However, continued review suggests certain operational improvements and provides a communication link beneficial to both units. In many regards the cataloging staff have acted as mentors or facilitators for those adjusting to and learning about the capabilities of the online catalog.

Other groups dealt with by cataloging personnel in the integrated online system environment include systems staff and vendors. With the card catalog, the cataloging staff maintained control. Now the local systems staff may need to run certain programs for overall system operations or take the system down for various reasons such as maintenance, tape load, or backup operations. This curbs access, limiting the control any one unit has over its need to use the system. Vendors control certain capabilities through software development or system maintenance of equipment. Vendor user groups help apply pressure for needed enhancements, but the vendor is still in control. Equipment maintenance is usually done at the convenience of the vendor. Our experience with this activity has been almost frustration free. These inconveniences are necessary and various backup measures are utilized to make the best of the limited time taken away from cataloging functions. However, the psychological impact of the loss of control can be intense in the early stages of implementation. While vendor user groups provide a forum to express needs and share experiences with others, an inhouse local users group may serve to enhance communications across unit functions and with systems staff. While our internal Aladdin Users Group has not had tremendous impact on our cataloging operations, it has provided a voice for staff working with the system on a daily basis. The group allows for expression of needs internally and provides the

avenue for broadening perspectives of user needs and library services.

Future developments with potential impact include the provision of local standards for bibliographic record input, the elimination of the manual shelflist, and the implementation of online title authority control. Allowing staff other than trained catalogers to input bibliographic records can create a data base without integrity and make it difficult for the user to determine the holdings of a collection. Developing local standards which are adhered to by all staff responsible for the input of bibliographic records, whether from the cataloging area or not, provides a recognized format accepted by the library for all bibliographic record input. With an integrated system, both circulation and cataloging staffs have need to input records in order to maintain their service functions. With a manual system, to circulate items not cataloged for the public card catalog, all one had to do was to provide a separate circulation system for those items, and the card catalog was untouched. With an online integrated catalog, a bibliographic record must be created in order to circulate uncataloged items. Therefore, staff not trained in cataloging principles, practices, and standards can create misrepresentation in the local bibliographic data base. A formal statement of what standards are used for bibliographic, item, and holdings data is a useful tool.

Another future development may be the elimination of the manual shelflist. This may make even more of an impact than adjusting to the online public access catalog. Our experience with the capabilities of VTLS to this point means that a special program would need to be written for displaying the holdings of a particular collection. This information would not display online. Also a call number search interfiles all call numbers beginning with the same basic call letters. If the library utilizes more than one classification system that has like call letters such as the LC classification system and the SUDOCs numbering system, these call numbers would interfile in display when a call number search is activated online. These factors have major repercussions for inventory control. Therefore, the elimination of the manual shelflist must be carefully studied before it is removed. There is no thought of its removal until all bibliographic records and holdings are online.

Title authority control has been promised for some time but is not yet available. At present, authority and cross reference cards are typed for series and uniform titles. Many series corrections which resulted from AACR2 have been left

untouched. Some series are still under various old forms as well as under AACR2 entries. Title authority should facilitate this clean-up. As retrospective conversion projects continue, the series conflicts become worse. Also, title searching in VTLS is based on a 5,2,2,1 search key. This means that if a spelling variation is outside of this structure, title added entries have not had to be created. In fact, to do so would generate duplicates on a title search. Titles based on authority records will require cross references. The implications of the implementation of title authority control are overwhelming.

A major adjustment to be made in an online integrated system environment is the acknowledgement that change is constant and often rapid. Future developments hold the promise of impact, the magnitude of which is not yet known. The changes we have absorbed since 1983, though many and often frustrating, have not been insurmountable. A staff eager for better service in a productive environment, open to any challenge, and well prepared, has lessened the impact of change.

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Keyes Metcalf, *Planning Academic and Research Library Buildings*. (New York: McGraw, 1965), 416.
Susan K. Martin, "The Care and Feeding of the MARC Format," *American Libraries* 10 (September 1979): 498.
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