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ABSTRACT

Guidelines are given for automating a library. Issues arising in automation are illustrated through the experience of the Doherty Library of the University of St. Thomas, Houston (Texas). The first step is to decide what type of system is right for the needs of the library and its patrons. In considering vendors of systems, it is important to consider the reputation and experience of the vendor and whether its system has been successful for others. In addition to developing criteria for vendors, it is necessary to develop criteria for the technical and user interface functions. This is best done by developing a set of questions specific to the library. In addition, the library should prepare a series of "show me" exercises, demonstrations of work flow, for each vendor, and all staff members should participate in these vendor demonstrations. Balancing cost, space, and security concerns are challenges that must be met. Implementing the system in stages greatly facilitates the project, and a plan should be developed that indicates when various steps in the automation process should be completed. Some of the difficulties faced by the Doherty Library in computer use and barcode application are discussed. Open communication with other libraries with automation experience will be extremely useful in the automation process. (Contains 8 references.) (SLD)

Selecting and Planning for an Automated Library System: Guidelines for Libraries

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Abstract:

The transition of libraries from a manual to an automated environment is an issue currently being faced by many smaller libraries that have limited funding and staffing. However, as the cost of automation continues to fall, and with systems becoming easier to implement and maintain, it is clear that this segment of the library marketplace -- the libraries that have limited financial resources and staffing -- stand ready to automate their libraries. This article provides some general direction to successfully approach the challenges of library automation.

Automation for the Doherty Library at the University of St. Thomas, located in Houston, Texas involved a collection containing approximately 160,000 volumes, over 900 periodical subscriptions, and serves a student population of 2,300 graduate and undergraduate students. At Doherty, there are eight full time employees and several student assistants available to serve the University's needs. In August 1991, planning for the automation of the library's circulation and cataloging functions, as well as automating the card catalog was begun. This article provides some information concerning the issues that arise from the automation process.

In automating your library, you must first decide what type of system is right for your needs and your patrons' needs. For example, a high school or corporate library with a limited number of volumes may consider a personal computer-based system as a sufficient and affordable choice. Public libraries faced with high item circulation and budgetary constraints may opt to limit automation only to the circulation functions.

Somewhat larger libraries may need to automate with a fully integrated system utilizing a minicomputer, or may choose to select systems operated wholly by the automated vendor themselves. (1) You also need to consider the physical space for the automated system: space for the online catalog, the central site hardware, staff terminals and printers. You must plan for air conditioning or exhaust systems, furniture for peripherals and hardware, and the electrical wiring of the system.

In considering vendors, there are several criteria that you can use to aid in the selection of a suitable vendor and library system. The following fundamental items should be included within your list of criteria: (2)

1. Is the vendor a leader in the field, have they been successful for several years and are they presently expanding their sales? One readily available and unbiased source is the annual automation marketplace survey published in Library Journal which provides an excellent overview of the current market. Compare the previous annual survey with past years.

2. Is the vendor financially healthy? Request an annual report form the vendor. Seek companies that provide audited financial reports without hesitation or delay.

3. What is the reputation of the vendor? Does it have a reputation for customer service? Do not take the vendor at their word. Speak directly to several current users of the system. Keep in mind that once you sign a contract with a vendor, the future success of your automation project falls solely on the quality of your own staff and the vendor's support team.

4. How much experience does the vendor have with offering systems to libraries similar to your own library? Obtain a directory of clients from the vendor and contact several of the libraries listed, particularly those similar in size and type to your library. On-site visits to fully functioning library systems may prove invaluable.

5. What type of local support exists with the vendor and local customers of a system? Does the vendor sponsor local workshops and is the cost reasonable? Are there experienced users of the system locally? In speaking with local users of a particular system, have they expressed an interest in developing local user groups and do they appear willing to assist you with questions or concerns you may have about the system?

6. Can your library afford the system offered by the vendor? Determine the level of support, both in financial and personnel

terms, that your administration or Board is willing to offer to you. Some systems are designed with custom programming capabilities that most libraries will not be able to manage without the assistance of a computer support staff.

7. Plan for future growth and the ability to network with other computer systems. Determine your present needs for file storage for your bibliographic records, as well as the circulation demands and the anticipated need for the number of simultaneous users of the system. At Doherty, the central site computer included enough storage for several years of collection growth, with the possibility of purchasing additional storage at a later date. The system purchased also has the ability of being connected to computer networks through an ethernet controller.

In addition to criteria for vendors, you must also develop criteria for the technical and user interface functions. My advice is to create a list of questions that you will ask each vendor that is selected and arrange a presentation at your library for these vendors.

A list of several dozen questions were used at Doherty for the vendor demonstrations. Listed below is a representative sampling of those questions:

1. "Does the system support full MARC format?" This is an issue of concern for smaller PC-based systems. With the development of computer networks (eg the Internet) and as the sharing of databases becomes a real possibility, it may be advisable to obtain a system that adheres to generally accepted cataloging standards.

2. "Can the MARC record be viewed from all modules?" Is the system truly integrated across different library applications.

3. "What MARC fields can be indexed?" The greater the amount of indexing possible, the greater the search capabilities of the system.

4. " What is the ability of expansion of the system?" File and data storage capacity must be determined, as well as the cost of expanding that capacity.

5. "Can the system be connected or networked to other systems?" What needs to be purchased to make this possible?"

6. "What is the portability of the software to other systems?" If, at a later date, you decide to migrate to another system, is the arrangement of the data amenable to migration. (Does the

system under consideration utilize software techniques that will prohibit or make difficult future migrations. Look for adherence to generally accepted standards such as MARC and NISO Z39.50. (3)

7. "Does the OPAC allow for various search techniques such as: keyword searching, boolean logic, truncated searching, proximity indicators, use of qualifiers (language, publisher searching, etc.) "What type of information are produced by these searches?"

8. "How does a patron select commands?" Are OPAC screens easily understood?

9. "Are search strategies identical for all functions: OPAC, cataloging, circulation, etc.?"

10. "Does the system security allow for a hierarchy of security levels?" Are unauthorized attempts recorded?

In addition to preparing a list of questions, you must also prepare a series of "show me" exercises planned for each vendor demonstration. Demonstrations of work flow are vital. Examples may include: cataloging a monograph, withdrawing an item, changing a call number, linking a barcode to an item, linking a barcode to a patron record, setting up loan policies for different types of

patrons, placing a hold upon a book, creating an authority file record, printing bibliographies from an OPAC search, generating an overdue notice, generating managerial reports and so on. Give each vendor an identical array of questions and exercises that they must address at their on-site demonstration. Such well-balanced and standardized testing will give you an excellent comparison of the vendors you are considering. One final note: insure that all staff members have the opportunity to participate in the vendor demonstrations. The aggregate of viewpoints from the staff concerning each system will further enrich the selection process.

Upon completion of the vendor selection process, it was decided that the University of St. Thomas would purchase a Dynix system including the OPAC, cataloging, circulation, dial-in, and reserve books modules using an IBM RS6000 model 220 POWERserver. This system possesses the capacity for several years future growth of the library database and readily has the capability to network to other computer systems via an ethernet controller. The ability to connect to on-campus and off-campus networks was a primary concern in selecting the Dynix IBM RS6000. In an information age that increasingly relies upon decentralized computer networks, it is imperative that you choose a system that can demonstrate the capability to interface with disparate systems through networking.

Balancing cost, space and security concerns are challenges that

must be met. At Doherty, the IBM RS6000 minicomputer is located in a corner of the Director's Office where it is easily accessible, secure and operates within a proper environment. Many issues are mundane but are of critical importance. For example, while vendors will state that their equipment can run in an office environment, keep in mind that a great amount of heat can be generated from computers, modems, port controllers and other equipment. Therefore, insure that proper cooling/ventilation systems are in place. At Doherty, the corner of the Director's Office is now separated, for security, from the remainder of the room by a wall with a locking door, so that the space occupied by the computer is approximately 4 x 10 feet. A space of this size requires additional exhaust fans and vents in order to maintain proper office environment temperatures. The computer room is cooled by the library-wide air conditioning system. As a precaution, temperature sensors were installed in the computer room: at 75 degrees fahrenheit an alarm sounds at the circulation desk alerting employees that the temperature is too high; also at 75 degrees, an exhaust fan, installed solely for use with the computer system, automatically engages and begins to draw air out of the computer room; at 85 degrees the entire computer system automatically shuts off to prevent damage to the disc storage and minicomputer. In the first year of operation, there were two or three incidents when the temperature briefly rose to 75 degrees

because of library-wide air conditioning problems, but that was quickly remedied by the auxiliary ventilation system. This temperature control and security solution cost under $2,000.

The electrical requirements involved the installation of circuits dedicated solely to the online system. It is advisable to obtain cost estimates for electrical work as early as possible: requirements such as dedicated circuits may cause the electrical costs to exceed your expectations. Also, plan for future growth at the time of the initial electrical installation. Having additional wiring installed at the time the original work is done will save you money in the long term, and provide you with greater flexibility for arranging terminals throughout your building.

A plan should be devised as to when you expect to complete various steps in the automation project. To provide you with an idea of the events that will occur, a simplified timeline for the Doherty Library automation project is included below:

July, 1990 - May, 1992: Retrospective conversion of 65,000 OCLC bibliographic records by a temporary full-time employee. (4)

August, 1991: Assessment of automation needs.

September - October 1991: Present requirements, cost estimate and justification for automation to the University Administration and Board of Trustees.

September, 1991 - October, 1992: Contact vendors and libraries currently using automated systems. Select a system and vendor.

October, 1992: Sign contract with the vendor of choice.

December, 1992: Authority control, de-duplication of bibliographic records, filing indicator review and tape extraction carried out by OCLC Amigos in preparation for the online catalog. Generation of barcodes ordered for July, 1994.

January, 1993: Prepare the physical space for installation. Complete electrical work. Install hardware and peripherals.

January, 1993: Hire systems librarian.

July - August, 1993: Barcode library collection.

July, 1993: Cataloging module in operation.

August, 1993: OPAC and dial-in modules in operation.

January, 1994: Circulation module in operation.

Summer, 1994: Reserve books module in operation.

Implementing the system in stages greatly facilitated the automation project. This allowed the staff to gain proficiency in one area of the library automation project before proceeding to the next module. In this manner adjusting to automation was restricted to a single module at one time and problems or questions about the module could be efficiently resolved. The selection of the system took approximately 12 months and primarily involved the Library Director. The actual installation of the hardware was completed by a Dynix employee over a two day period. At the time of installation, a systems librarian with Dynix experience was hired and this employee is responsible for the maintenance of the Dynix system and the training of staff. (5) Prior automation experience of the systems librarian enabled the implementation and training phases to be completed within an 18

month period.

In retrospect, the automation project went as planned, although some delays and problems did occur. It is advisable that in planning an automation timeline, include some additional time to allow for delays that will almost certainly occur. One notable example involved the bibliographic utility OCLC Amigos which had been selected to prepare the Doherty Library database for loading into the Dynix system. Unforeseen delays with extracting the library database from OCLC and completion of duplicate record resolution, filing indicator review and general database cleanup caused some delay in the installation of the database into the RS6000. These delays were due to computer problems resulting from the installation of a new computer system at Amigos. Fortunately, the automation schedule was not significantly effected, but be aware that vendors may experience delays due to unexpected problems of their own. A second problem involved our unhappiness with the quality of the OPAC and staff terminals initially purchased through Dynix. Originally, Dynix delivered Wyse 30 terminals for our system in accordance with our contractual agreement. However, the poor screen display (i.e dim or "weak" character display on the monitors) was unacceptable to staff and patrons. After consulting with the manufacturer, Wyse Inc., we had the original terminals replaced with higher quality Wyse 150 terminals, although some modification to the keyboards was required. While this upgrade required some additional funding,

the results were readily appreciated by users of the system. A third problem occurred with the application of barcodes on the books. Initially, barcodes were placed on the outside front covers of each book. This was done so that circulation transactions could be completed most efficiently and that the barcoding project itself could be completed sooner. There was a concern that the barcodes would not adhere properly on the outside covers, or may be removed by patrons. These concerns were apparently alleviated after consulting with other libraries that had placed barcodes on the outside of books (verses the inside cover). In addition, the vendor indicated that the temperature and humidity at the Doherty Library should not cause a problem for the barcodes. Unfortunately, this was not the case for our library. Shortly after beginning the barcoding project, staff began to report problems that the barcodes were not properly adhering to the book covers. As a result, the placing of barcodes on the outside covers was abandoned and the barcodes were then placed on the inside back cover. These examples illustrate that problems can occur at any stage of the automation project, and you must be willing to be flexible with your automation planning, adapting to changes as they occur.

Regardless of the advice that St. Thomas received on the placement of barcodes, decisions should not be made in a vacuum. Librarians employed at smaller libraries may tend to become

isolated from other librarians who have much useful advice to offer concerning the automation of a library. It is vital to communicate with librarians who have prior automation experience, since such contact is an excellent source of information. From my own experience, librarians are very generous with their time in expressing their opinions and knowledge in the area of automation. The more librarians you contact, the richer your sense of the strengths and weaknesses of various systems will become. In addition, vendors are excellent resources of information. You may take their sales pitch with a grain of salt, but draw from them comparisons of their system with that of their competitors. Do not hesitate to spend a great deal of time with your colleagues outside of your library, as well as with vendors selling library automation products, so you can acquire a clear sense of the direction you should take for your library's automation plan.

Finally, I would like to briefly mention something about negotiating a contract with a vendor. (6) (7) A guiding principle that you must follow is to have the vendor use unambiguous language for each provision in your contract. This will prevent any confusion or acrimony in the event that a dispute arises after the contract is signed. Insure that the contract has clear language on the exact capabilities of the system you intend to purchase, as well as the delivery dates, maintenance agreements and payment schedules. Do not leave any provision open to

multiple interpretation. (8)

Automation brings many challenges, improvements and changes. These challenges can be met by selecting a competent and reliable vendor and an appropriate library system through the use of carefully chosen criteria, creating a vendor-library contract that avoids multiple interpretation, actively seeking the opinions and advice of experienced librarians, and continuing to maintain open communication with other libraries that use the system you have chosen. These steps will clearly place your library, regardless of the scope of your resources, onto the path of successfully implementing an automated library system.

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