Automation of Library Functions with Special Reference to Circulation System Adopted at the Library of Open University of Sri Lanka

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Abstract

We were slow to explore the automation world as the custom software development entails substantial investment and the off the shelf software packages are either too costly or do not meet all the requirements. However, the several library automation projects have been embarked in recent years, as the librarians could not ignore the power of the library automation in order to meet up with the rest of the world in the trend of information management and dissemination. This paper reviews the success of the automation project of the library of the Open University of Sri Lanka with special focus on the automating the circulation of library materials using Alice for Windows - the integrated library management software package.

Introduction

Libraries cannot escape from the revolution of information technology (IT), which has revolutionized the way of working of the entire society. University libraries are under ever-increasing pressure to maximize our technological capabilities in order to keep up with academic demands. We also have a strong obligation towards the nation as the country's frontline sector of libraries, who should provide the initiative to the advancement of the Sri Lankan library field.

The hardware in form computers, printers, scanners etc and software systems are the two basic requirements of automating any set of functions. It has never been easy for librarians in the developing countries to convince their authorities on the importance of computerizing the libraries. That is why the computers took long time to step into the libraries in our part of the world. However, the librarians have been able to grab the opportunity in both hands to make spectacular changes to convert

traditional form of libraries to modern information centres, which are energized by online house keeping operations and information retrieval services.

Three decades ago, like most other developing countries Sri Lankan libraries made an inexpensive approach to library automation with the CDS/ISIS data base management system developed by UNESCO. The National Science Foundation (NSF) former NARESA has done a splendid work to the Sri Lankan library community by promoting the package, providing training and introducing the upgrades. Although the CDS/ISIS is now includes features that are needed for successful automation of most of the library functions, a very few librarians have tried to automate the library functions other than digitizing the resource collections using the CDS/ISIS package. Therefore, the library automation in Sri Lanka seemed to be stagnating for years until several leading librarians stepped forward to boost up the mission to achieve the full potential of library automation for the sake of the clientele and the betterment of the field of librarianship. As a result we saw the implementation of new library automation projects in several leading university libraries and in several special libraries affiliated to well-known government and private organizations.

The most crucial decision that librarians had to take in the initial stages was the selection of software system. Under very demanding circumstances three different off-the-shelf software packages were chosen by the university libraries. They are the Alice for Windows (University of Peradeniya, University of Colombo, University of Sri Jayawardenapura, Open University of Sri Lanka), Libsys (University of Moratuwa), Libsuite (University of Kelaniya). The University of Ruhuna has developed an integrated library management system based on the open source package 'KOHA'.

In embarking the automation project, the Open University of Sri Lanka (OUSL) library had gone through a number of critical and time consuming phases - such as data entry/retrospective conversion; acquiring and maintaining hardware/software requirements; developing and maintaining infrastructure facilities; training and re-training staff and initiating different modules one by one to automate housekeeping operations and information retrieval services - which should be described in detail. However, the aim of this article is to share the author's experience on the process of implementing and maintaining the automated circulation system adopted at the OUSL library using Alice for Windows.

Automation of circulation system: OUSL library experience

To facilitate the front-desk operations with a powerful yet easy-to-use circulation module is a dream of many university librarians of Sri Lanka for many years. An automated circulation system is very attractive; as turnkey circulation modules put

frequent circulation activities - loans, returns, reserves, renewals, status review, bookings, and fine processing - just a few clicks away.

The automation of a circulation system is a process, which needs great deal of planning and evaluating. The success of an automated circulation system depends considerably on the accuracy and the comprehensiveness of the resource database and borrower database as well as the power and the capacity of circulation inter-phase of the software system.

Assessing needs and setting priorities

An attractive and efficient circulation desk can up lift the library image more than any thing. The users' cooperation is very much needed for the success of the automation of circulation. Therefore, each and every step of the process of automating should be planned carefully. The awareness programs on the software package and how it works etc. are useful to prevail the clientele. The sufficient supply of required recurrent items such as barcode labels and required equipments (in good working condition) such as computers, barcode printers, normal printers, barcode readers etc. are also vital for successful automation. In addition, librarian should take care of the network connectivity and electricity supply to minimize fluctuations and interruptions. Security against the system failures, the data lost and corruptions are also determining factors when considering the possibility of disposing the manual system of keeping records.

The existing circulation policies should be revisited in the light of upcoming new and expanded user services. For example the OUSL library formulated new set of rules and regulations to streamline making reservations, sending overdue notices, charging process for lost books etc.

Setting parameters

Uttermost important thing is to ensure the security and accuracy of transactions that have been made via system. Therefore, it is a must to prevent unauthorized access. Alice incorporates password based access control system, which allows the system administrator to define the operation/s each and every password holder could perform very specifically (what are the modules and sub modules he/she is having access and what are the functions - read, edit, delete, print - he/she has permission to perform within the given module/s). OUSL library has created passwords for different workstations so that each workstation can perform their duties without interruptions. In addition, the OUSL library has created member categories - academic, academic support, administrative, non-academic, consultants, undergraduates and postgraduates - to define the privileges - number of materials

entitle to, duration of loan period, the amount of penalty for overdue materials etc. - of each category separately. Alice is capable of creating unlimited number of member categories and managing them with out much human intervention so the chance of errors is very little.

Circulation module – Alice for Windows

Circulation module of Alice for Windows includes all the key functions that are needed to perform effective circulation system. They are; maintaining borrower database, managing different member categories, managing different resource categories, controlling the calendar, scheduling the fine, generating reports, printing overdue notices and recall notices etc. In addition, it is capable of performing almost all the circulation practices such as issues, returns, bookings, reservations etc., while keeping records on information seeking behaviour of individual patrons and providing printouts if requested. However, the librarians must be very cautious in handling this personal information as the privacy and freedom of our users is highly endangered in this era of technology.

Further, the Alice circulation module is providing reasonable platform to exchange data among the resource database, borrower database and inquiry modules. The success of Alice circulation module as inter-phase is a lot depend on the accuracy of unifying fields. Therefore, extra effort should be paid to those fields in entering data. The fist set of fields is appearing in the cataloguing sub module page number 3 - Copies. The 'Barcode' here is the unique identification code of the library material (book, AV material, CD ROM etc.) and the field 'Loan category' in the cataloguing module defines whether the material is only for reference or available for loan while the field 'Cost' is help in calculating the cost of the material when printing cost-recovery notices. See "Plate 1". Similarly there are four linking fields in the first page of the borrower file namely 'Barcode' (unique identification code of the member), 'Loan category' (define the privileges of the member), 'PIN' (generates a secret code, which is necessary for the member to access his/her member account remotely), 'Message' (conveys the librarian's message if any to the member at the point of borrowing library material/s). See "Plate 2". The fields 'Address'/ 'E-mail' in the second page are necessary in generating overdue notices and recall notices and managing current awareness services etc. See " Plate 3"

Plate 1 'Copies' page of the cataloguing module

Plate 2 Borrower file - first page

Borrower Details: Circulation: Alice

E2118

E2117	YOOSUF., S A C (LLB)
E2118	PERERA., B.N.G.P. (BSc)
E2119	KARUNARATNE., S.I.U. (BSc)
E2120	MUTHUNAYAKA., M.N.M (ENGINEERING)
E2121	FERNANDO., R.P (MANAGEMENT STUDIES)

Borrower | Address | Limits | Other | Special |

Barcode E2118   Loan category ST2

Borrower type   Membership

Last Name PERERA,   Membership type

First name B.N.G.P.   Since 08/03/2004

Master   Start 08/03/2004

Comment L3 EMP   Expiration 01/26/2006

Sex (M/F) Female   Loan Limits

Student code 50350061   General 2

Date of birth   Reference 0

Scholastic year

Home room BSc

PIN **   Housebound   Other 0

Message Please meet the librarian

17

Plate 3 Borrower file – second page

Bar-coding of library materials

Barcodes have become an indispensable part of library automation because they serve as a computerized accession number – a unique identifier that links a specific book, journal, and compact disc– to the computerized bibliographic record that describes it.

The OUSL library decided to launch an in-house bar-coding project as a partial but very important requirement for the automated circulation. A barcode printer and labels were purchased from a local vendor who agreed to provide in-house training. The project of bar-coding of books was commenced at the end of the year 2001 in three phases, which ran almost simultaneously. The two decisions taken before the commencing of the project are; to use the accession number as the barcode number and paste the label on the lower half of the title page. *Phase one* was the bar-coding of new books, which is the continuous process of the project. The *phase two* was meant to mark the backlog. Labels were printed according to the shelf list and pasted them at the bookshelves taking batch by batch in a manner that caused minimum disturbance to the users. (One batch of books was placed on a trolley and a staff member opened the book and read the accession number and another member selected the correct label and pasted it on the title page. The completed batch was replaced before taking out the next batch of books.). The *phase three* was introduced to locate the books on-loan during the time of the phase two. The returned and referred books were checked for the presence of a barcode before re-shelving and the completed the job on the spot. In this way 95% of out of around 75,000 materials were successfully bar-coded within three months. The materials left out were identified at the circulation desk when members brought them to return or borrow.

Bar-coding of membership

The very first thing that had been done regarding the conversion of membership is revising the membership numbers in order to straiten up the method of assigning membership numbers. A running number - all digits - irrelevant of different categories of members was converted into an alphanumeric identification number with a special code for each category. The using of alphanumeric numbering method for membership eliminates the chances of member barcode been identical to book barcode, which is all digits.

Lists - which contained the member name, old number, and new number - were prepared and made separate files for each category. Three months were allocated for members to convert their membership to the new system. They were asked to return all the books and handover the membership cards to the officer in charge. Once they were enrolled to the new system a barcode label was pasted on the record book in case of a student (it was a temporary measure taken until the university issues a bar-coded student card for overall use). A special set of card was printed in 3 colures to accommodate different staff member categories.

In addition, the membership form was amended to include fields namely 'Telephone', 'e-mail', 'employed: Yes/No'. The member record was updated in front of the member when he/she came to convert the membership. Therefore, the borrower database became more comprehensive and accurate after the conversion period.

Data entry/retrospective conversion

The OUSL library had maintained digital circulation database and borrower database via customized stand-alone circulation module since early 1990s. Parallel conversion method was adopted as it allows running old system concurrently with the new system for some time to see the new system over the old system before parting with the old system.

Training

The success of a computer-based library system depends much on key persons to provide strength, enthusiasm and intelligence to the new system. Several training sessions were held and focused on how easy the staff can utilize the software by training each staff according to his/her job description. Every attempt was taken to make all the library staff aware of the new system. In addition, a number of handouts and instruction sheets were developed to facilitate the usage of new system for both staff users and end users.

However, there were no proper training sessions organized for members, other than providing user manuals and guidelines to operate Online Public Access Catalogue (OPAC). It is true that the staff is willing to explain the new system to members who need clarifications or assistance in manipulating the OPAC, but most of the disagreements occurred between the staff and the members in later stages could have been avoided if there were suitable user awareness/ familiarizing programs in the initial stages.

Printing notices

Managing recovery process is very convenient, accurate and quick with the automated circulation system. Therefore, OUSL library has able to clear up backlog of past transactions within first 4 months and maintain very methodical practice of sending overdue notices and cost recovery notices. The statistics of the last two years clearly show the improvement of returning books on time.

Generating circulation reports

Ability to generate different types reports, which are not even imaginable with a manual system, is another attractive feature of an automated system as it makes the librarian's duty of keeping statistics easy. Alice for windows is also capable of producing a series of circulation reports. However, the suitability of these reports depends on the requirements of the library. Librarians should study the available formats of reports in detail to find out whether they include all the necessary information, (for example OUSL library had to customize the overdue notice format and the cost recovery format to add some essential information), whether they can be limited by the desired parameters etc. If not it is also advisable to get the required report formats customized before hand to identify the data source requirements to generate them. Otherwise, it may create an additional workload. For example the OUSL library had to re-tag all the entries of books supplied by ADB (Asian Development Bank) to generate the report of 'Usage of ADB books', as there weren't any possibility in the software system to generate a usage report, by the supplier.

Controlling security keeping backups

One of main responsibility of the system administrator is to ensure the safety of the data from the points of view of the user and the library. As mentioned in the section 'Setting parameters' the Alice software package could build successful password control system where the system administrator can define the privileges of each password holder very specifically.

Once the circulation introduced there should be an extra protection over data as it is very difficult if not impossible to recover the transaction data. Therefore, there should be a reliable mechanism to take backups periodically to minimize the data loss. OUSL library is saving two backups daily (12 noon and 4.00 p.m.) in two workstation computers besides, the automatic backup system that set to take backups at 6.00 p.m. every day. In addition, OUSL library is in the habit of taking a CD ROM backup once a month.

Discussion and conclusion

It was not easy for us to implement the automated circulation project. We had all sort of difficulties, problems and limitations such as network problems, power fluctuations, system failures, lack of funds, hardware/software problems, fear of retrospective conversion, lack of manpower, fear of staff etc during the initial stages of implementation. Alice made our life hard and kept us all the time on our toes. The

situation becomes calm gradually once the staff and users become familiar to the system, strengthen the infrastructure, identified and treated the shortcomings in the software/ hardware solutions etc. This doesn't mean that every thing is fine and perfect at the OUSL library but the situation is now under control.

It is almost two years since the OUSL library had implemented automated circulation via Alice for Windows. A few improvements have been done recently by the library to enhance the quality and efficiency of the circulation process. The online reservation has been activated from last August, which had been delayed due to technical problems. The members who browse the OUSL catalogue via Internet can reserve materials that he/she wishes. A project to complete the borrower database by inserting the member photograph is also in progress. This is another postponed activity due to absence of a proper scanner and the limited hard disk capacity of the server. The library received a new sever and scanners in last December to initiate the project. In addition, the membership cards are being processing in-house and issuing over the desk since the acquired of laminating machine.

The OUSL library has several future plans in respect to enhance the quality and the efficiency of circulation and dissemination of information such as introduce Selective Dissemination of Information (SDI) service (the module has been already purchased), activate online registration, conduct series of user training and staff training sessions. Our ultimate goal is to introduce a self circulation system based on the Radio Frequency Identification (RFID) technology to provide the full potential of complete library automation to our clientele disperse all over the island.

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