

EXPERIENCES WITH LIBRARY MANAGEMENT SYSTEM MIGRATION AT BINDURA UNIVERSITY OF SCIENCE EDUCATION (BUSE)

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Abstract

The paper is a report of what library staff at BUSE have experienced in a bid to effectively automate library services. The case study provides details of how the institution moved from a card catalogue to CD/ISIS for Windows, Mandarin M3, Mandarin Oasis Version 2.9.3 and then to Koha. Evidence of the migration processes was gathered from written reports and questionnaires. Findings reveal that the limited efficiency and effectiveness of the old system and increasing students' enrolments pushed the library to adopt newer technologies in order to accommodate growing patron demands. The desire by staff to operate using standardised web-based MARC compliant library management system actively, promoted the library to migrate to compatible software. The migration had its own challenges, which included limited time and expertise, quality issues, data corruption and poor ICT infrastructure. Proper planning, prior feasibility studies, training and resource mobilisation are recommended for those libraries planning to carry out library management system migration.

Keywords: Library Management System migration; Library automation; CDS/ISIS; Koha; Mandarin M3; Mandarin Oasis

1. Introduction

Library automation has become a key issue in library and information services. Information technology is an integral part of librarians' work particularly as it relates to library management systems. Coping with library automation and integrated library management system has become indispensable but deciding on which library management system to introduce or migrate to is a complicated issue (Raju, Moodley, Jagarnath, Chetty, Shongwe and Raju 2007). Library management systems migration is the process of leaving an old library management system and adopting a new one (Phadke 2015). Proper planning is required to ensure that the library management system chosen performs according to the expectations of the Librarian; the system must also be beneficial to the library patrons (Raju et al 2007). It has been observed that introducing an integrated library management system from a manual system is less challenging than migrating from one automated system to another (Raju et al 2007). This is attributed to compatibility challenges that may arise as one migrates from one system to another.

2. Context of the study

Library management systems migration at Bindura University of Science Education (BUSE) library was studied. BUSE is a government funded university in Zimbabwe established in 1995 as a College of the University of Zimbabwe. It became a fully-fledged university in February 2000 following the passing of the Bindura University of Science Education Act in parliament (BUSE 2014).

BUSE Library started off with a manual card catalogue system known as the Browne System. As student enrolment rose, a need for an automated library management system became necessary as a means of ensuring effective service delivery. CDS/ISIS for Windows was adopted in 2000. All manual card entries were then entered into CDS/ISIS for Windows in retrospect. However, CDS/ISS for Windows was never used for circulation services because the library migrated to Mandarin (M₃) in 2008. M₃ library management system was used for some years until 2012 when the library adopted an updated version which the service provider introduced. The library migrated to a web based library management system known as Mandarin Oasis that replaced M₃. In December 2015, BUSE Library migrated to Koha library management system which they are currently using.

CDS/ISIS is short for Computerised Documentation Service / Integrated Set of Information Systems. It was developed by the United Nations Educational, Scientific and Cultural Organization (Buxton and Hopkinson 2001).

Mandarin M₃ is an integrated library management system comprised of six modules namely OPAC (online public access catalogue), circulation, cataloguing, report tools, group editor and inventory modules (Mandarin Library Automation 2012). Mandarin Oasis is an upgraded version of M₃ which is web based.

Koha is an open source integrated library management system that was developed in 1999 by Katipo Communications from New Zealand (Hillenius 2012; Raju et al 2007).

3. Literature review

Raju et al (2007) noted that there has been an influx in library management systems leading to continuous improvement of the systems by developers to ensure survival. Libraries decide to migrate from one system to another because of a number of reasons that include phasing out of an existing system by vendor, change of version by vendor, high costs of maintenance, lack of expected features, and technological developments (Matoria and Upadhyay 2005).

The aim of automation is to ensure that there is efficiency and effectiveness in service delivery. It is, therefore, important to continuously improve library management systems so as to ensure that libraries are easily accessible to patrons (Hillenius 2012; Phadke 2015; Raju et al 2007). Libraries consider a number of issues as they automate or migrate from one system to another. The cost of acquiring the system, maintaining it, its user friendliness, modules available, compatibility with other systems, among other factors affect choice of a new library management (Phadke 2015).

Library management system migration is challenging to those library staff without prior experience of the process (Raju et al 2007). There are also challenges associated with library management systems migration, chief among them being compatibility issues and lack of

expertise (Phadke 2015). Data loss and data corruption may also be encountered as libraries migrate from one system to another (Matoria and Upadhyay 2005). This is often caused by incompatibility between the old and the new system, absence of key data fields and unclean data.

Small library management systems that develop slowly have been retired and are being replaced by dynamic more sophisticated systems (Phadke 2015). Libraries now prefer systems that are flexible and accessible via the Internet. Use of data export and import formats such as MACHine-Readable Cataloging (MARC), International Standards Organization (ISO), HyperText Markup Language (HTML) and Extensible Markup Language (XML) is important as this helps to minimise data loss, maintain data integrity among other key issues.

There are various ways through which a new library management system can be implemented. A phased approach can be used whilst other libraries prefer to use the ‘big bang’ approach in which all sections are implemented at once (Raju et al 2007). Raju et al (2007) emphasize the importance of training in the effective implementation of a new library management system. Staff that are competent to handle library management system migration are important as they play a major role in ensuring that the migration process is successful.

4. Research objectives

The objectives of the study were:

- To document how BUSE Library migrated from an older library management system to the one currently in use.
- To identify challenges faced by staff during library management system migration.
- To suggest possible solutions to overcome challenges faced during library management system migration.

5. Research Methodology

The case study method was employed in this research. A case study was described by Gillham (2010:1) as an investigation to answer specific research questions in a particular case setting such as an individual, animal, process, household, group, institution, community or nationality. BUSE library management system migration process was the case under study. As suggested by Gillham (2010) and Woodside (2010), the case study method gave researchers an opportunity to ‘illuminate’ the phenomenon under investigation. Reports and questionnaires were used to gather data on the library management systems migration. The data collected was sorted thematically and presented in textual and tabular formats.

6. Findings

6.1 Library management systems used at BUSE

It was found out that BUSE Library started off with a manual system, attempted to use CDS/ISIS which was succeeded by Mandarin M₃, Mandarin Oasis and eventually Koha, in that sequence. Manual recording was never done considering that the library started off with the Browne Issue System.

6.2 Reasons for library management systems migration

As suggested in the literature cited above, there are a number of reasons why library management systems migration is instituted. For the various library management systems migration cases that BUSE Library went through, the following reasons were given:

- The old system's capacity was too small;
- The new system was more efficient;
- The new system was more effective;
- Cost of maintaining the old system was too high;
- Moving to free and open source software;
- The new system was easier to use than the old system;
- Migrate to a new system that meet global standards as MARC format and Z39.50;
- Migrate to a new system that meet in-house standards;
- Old system had become obsolete;
- It was institutional policy to migrate;
- The new system had more functions; and,
- Freedom from vendor lock in.

Respondents indicated that they felt obliged to migrate from CDS/ISIS and later on from Mandarin Oasis because their capacities were no longer in a position to handle the transactions expected of them. As the migration was being done, library staff sought a newer system whose capacity, performance and efficiency were better than the former as students' enrolments rose.

The cost of maintaining the old system had a bearing on whether a system would be retained or not. BUSE Library decided to migrate from Mandarin Oasis after realising that the cost of subscribing and maintain the system was becoming too high. In a bid to cut on costs, BUSE Library migrated from Mandarin Oasis, proprietary software, to Koha open source software. The migration was also intended to avoid vendor lock in. System ease of use also contributed towards its choice; Koha was adopted as library staff felt that it was user friendly when compared to Mandarin Oasis.

The library had to migrate from Mandarin M₃ to Mandarin Oasis because some features of the old system had become obsolete and the service provider was upgrading to a new version with better features and functions that matched patrons' expectations.

BUSE Library's policy position was to review its library technology every five years. As a result of the review, recommendations were made for the library to migrate to Koha, a newer library management system that met in-house standards and global standards such as MARC format and Z39.50.

6.3 Challenges faced during library management systems migration

A number of challenges were faced by BUSE Library staff as they migrated from one system to another. As shown in Table 1 below, limited time for the migration process, lack of expertise to manage the migration process and data corruption and loss were the most encountered challenges. Poor infrastructure at the institution, quality assurance issues and system failures also posed challenges to library staff as they migrated from one library management system to another. Resistance by some staff members, incompatibility of old and new system, customising the new system, limited technical support by developers, limited funding and staff anxiety such as losing jobs, learning new skills, added responsibilities were among the minor challenges faced.

Challenges	Responses
Limited time	5
Lack of expertise	5
Data corruption and loss	5
Poor ICT infrastructure	4
Quality issues	3
System failure	2
Incompatibility of old and new system	2
Resistance by library staff	2
Customization of new software	2
Lack of technical support from developers	1
Staff anxiety such as losing jobs, learning new skills, added responsibilities etc.	1
Lack of funding	1

Table 1: Challenges faced during library management system migration

6.4 Solutions to challenges encountered

A number of strategies employed to address the challenges that were encountered during the migration process. Staff training was conducted to ensure smooth migration from old to new systems. Staff had to plan, carry out some feasibility studies and pilot testing to ascertain the usability of the new systems before committing themselves. Staff also developed and used procedures manuals so that there was a referral document that would also facilitate consistency in the use of the library management system. In cases where challenges required external support and assistance, library staff used discussion forums and mailing lists or hired an expert to assist. This was the case with the introduction of Koha and Mandarin Oasis, respectively. After observing possibilities of resistance by some stakeholders, some lobbying had to be done; this included involving all stakeholders from the initial stages. This approach was used when migration to Koha was done. To avoid data loss and corruption, some resource mobilization was done that saw the library acquiring the right equipment such as servers, anti-virus software, back up facilities and an uninterrupted power supply.

6.5 Library management system migration best practices

BUSE Library staff who participated in the survey made the following recommendations for those who intend to achieve seamless and incident-free library management system migration:

- Proper planning and feasibility studies must be conducted before adoption and migration to a new system.
- Hiring external experts to conduct staff training and recommend the right equipment to use may be necessary.
- Gradual or phased changeover is recommended as it allows staff to practically take note of the strengths and weaknesses of the new system.
- All library stakeholders must be engaged especially staff who may fear losing their jobs.
- It is important to get feedback from the users of the system as this helps in future migration decisions.

7. Conclusion and recommendations

Limited efficiency and effectiveness of old systems and increasing demands for the library management system pressed the library to adopt newer technologies in order to accommodate the growing demands. Library staff's desire for standardised web-based MARC compliant library management system promoted the library to migrate.

Authors suggest that librarians considering migrating should carry out proper planning, prior feasibility studies, training and resource mobilisation if proper library management systems migration is to be achieved. There is need for further studies on a proposed model that libraries may adopt when migrating from one library management system to another.

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