

Case Study: Malawi Koha ILS pilot

Project overview

The eIFL-FOSS ILS project provides an opportunity for evaluation of and possible migration to a free and open source software (FOSS) integrated library system (ILS). It promotes direct engagement with the FOSS communities of a chosen ILS. And it lays the groundwork for a mutual support network across eIFL.net for further libraries investigating migration to a FOSS ILS. The project focused on evaluating two FOSS ILSs with robust and open development and support communities: Koha (<http://www.koha.org/>) and Evergreen (<http://www.open-ils.org/>). Following a general call for participation in early 2008, libraries from 12 countries representing 11 language groups submitted applications to become pilot sites. From these, 7 sites were selected that represented a wide range of libraries and regions. All applicants joined an email discussion list in order to follow the progress of the pilot sites. The 7 pilot sites are: Fundamental Scientific Library of the National Academy of Sciences, **Armenia**; National Scientific Library, **Georgia**; Mzuzu University, **Malawi**; Library of the Faculty of Medicine Pharmacy and Dentistry, University of Bamako, **Mali**; Madan Puraskar Pustakalaya, **Nepal**; Midlands State University Library, **Zimbabwe**; and An-Najah National University Library, **Palestine** (West Bank). Each pilot library participating in the project was invited to participate in an intensive technical training workshop in Yerevan, Armenia, in June 2008. Case studies of each pilot draw out learning points for other libraries seeking to move to a FOSS ILS.

Pilot library

Mzuzu University Library (MUL <http://www.mzuni.ac.mw/Library.htm>) is a modern facility integrating print and electronic information resources. The library has a collection of 16,671 volumes and 200 journal titles arranged by Library of Congress Classification Scheme. The catalogue is accessible via an Online Public Access Catalogue (OPAC) available from a number of desktop computers located throughout the library for student use. The library includes a special collection of Malawiana as well as a reference collection. It is also a depository of the International Monetary Fund (IMF) collection, as well as holding a wide range of World Bank publications, United National Development Programme (UNDP) publications, and a special collection of material on HIV/AIDS. Somewhat unusually the Library currently coordinates Information Technology development at the University and is responsible for computing services support, including training of students and staff, Internet access skills, maintenance and troubleshooting. There is also a children's Library, as an annex to the main Library, catering for school children in and around Mzuzu University.

Malawi has a vibrant and well-organised support network for libraries in MALICO, the Malawi Library and Information Consortium (<http://www.malico.mw/>). This is especially true in the case of technology where the MALICO Technology Research Group led by Mrs Dorothy Eneya has championed continuing professional development of IT staff within the consortium's libraries. The pilot team at Mzuzu University library is headed by Irene Sachs who is Reader Services Librarian. Their work is ably supported by the Chair of MALICO, Professor Joseph J. Uta, who is also the University Librarian at Mzuzu University.

Motivation for exploring a FOSS ILS

Across the MALICO Technology Research Group there had already been interest for some years in moving to a FOSS ILS. Two factors drive this interest. In those libraries within the consortium where a proprietary ILS is in use, the cost of the licence fee is the most significant motivator. In

other libraries where a CDS/ISIS database forms the backbone of the catalogue, the desire has been to move to a more substantive ILS with standardized data formats such as MARC21 and a fully integrated suite of components for acquisitions, cataloguing, circulation, OPAC, etc. The decision by the consortium to put forward one library, as a potential pilot within this project, was not seen as an isolated event. The experience of that pilot library will inform the potential migration of a large number of libraries across the MALICO consortium. The investment of time in developing the skills to handle a FOSS ILS could then reap rewards elsewhere, as the piloting institution could become both an exemplar as well as a key support element for widespread adoption within Malawi.

Learning point: a pilot library can serve as the leading edge in a potentially substantive consortium-wide migration to a FOSS ILS.

FOSS ILS choice

Mzuzu University Library opted to pilot Koha (<http://www.koha.org/>). This was an easy decision because the MALICO consortium had begun initial investigations of Koha. It was well understood that in the long run there would need to be a move to a FOSS ILS. The licence fees for proprietary systems may be manageable by libraries for a time, at least if there is external funding to cover them. But eventually the libraries in Malawi will need to stand on their own and to do that at least one practical measure is to take control of the costs surrounding the ILS. Since there is no up front cost to download and install Koha, and naturally no recurring licence fee, this FOSS ILS meets the initial criteria for sustainability. At the time when MALICO was first investigating FOSS ILSs, Koha stood out as the frontrunner for small to mid-size libraries. But there is no denying that a sophisticated and complete ILS like Koha comes with its own set of technical and administrative challenges. Full credit therefore goes to the MALICO consortium in realising this early and planning for success. Training workshops on Koha 2.2.9 were being organised by the MALICO Technology Research Group as long ago as the summer of 2007. These were introductions to the user interface of the staff client and the OPAC. They helped to lay the groundwork for widespread interest in Koha as a possible future ILS. These initial forays also had the benefit of allowing technical staff across MALICO gradually to encounter the challenges that Koha might bring without the time pressure of an urgent migration.

Learning point: it is advisable to give yourself enough lead-time for the evaluation of a new ILS.

Initial Installation

The earlier experience of Koha 2.2.9 meant that the pilot site and its support network within MALICO knew something about the Koha development community. In particular they knew that Koha 3.0 was due for release in the summer of 2008. This new release was to come with a host of new features, perhaps most noteworthy being the integration with the Zebra indexer. This significantly increases the size of holdings that Koha can manage efficiently. The downside to Koha 3.0, if it is a downside, is that there is no simply packaged Windows installer for it. Koha 2.2.0 had a Windows installer that made it very useful for quick installations for demonstration and training purposes. That remains an attractive feature. However for production use Koha has long recommended installation on a Linux server, preferably Debian GNU/Linux.

Migration to a new ILS often involves library IT staff learning new skills. When Mzuzu University Library became a pilot site for this project, they wisely did not wait for the much-anticipated Koha 3.0 in order to begin building their Linux systems administration skills. They decided to start honing their skills right away with a trial installation of Koha 2.2.9 on a Debian 4.0 server. Although staff did have some experience with Linux – mostly with the Red Hat distribution of

Linux – Debian can be somewhat challenging. It uses a different form of package management than Red Hat and so not all previous knowledge of Linux was transferable to this new Debian server. Fortunately a volunteer from Japan who happened to be at the university helped out by undertaking the installation. Mrs Daurice Nyirongo, who is the head of Information Technology for the library, used this as a training for herself and her team. She then took over management of the installation without difficulty.

Learning point: in order to learn new skills, libraries will often need to reach out to non-staff for initial assistance; the FOSS community is familiar with sharing skills and knowledge and can be appealed to for help.

When Koha 3.0 was finally released, the library moved quickly to install it. Despite the new skills they had gained installing Koha 2.2.9 on a Debian server, the first attempt at 3.0 failed. As did the second and the third. It took at least four failed attempts at installation in order to manage a clean install of Koha 3.0. For experienced systems librarians this is no surprise. Extremely complex systems will have a great many fail points in their installation procedures. Unless everything is done completely right, the installation fails¹. But rather than being a block, most systems librarians would agree that this is actually a good thing. The challenges that are overcome are all learning points. Treating them as such can alleviate a great deal of the potential frustration. And careful notation of what when wrong and where can help build local documentation for the next clean install. When you can cleanly install an ILS like Koha without any difficulty, you know that you probably also have sufficient skills to manage it effectively.

Learning point: complex systems often take many attempts initially in order to achieve a successful installation; do not be discouraged if your installation fails once or twice or even ten times; this is how systems librarians master new systems.

Building a widespread base of knowledge

MALICO and Mzuzu University in particular have taken an innovative approach to build a widespread base of knowledge of Koha amongst library staff. Early familiarity workshops using Koha 2.2.9 have already been mentioned. And that early experience was not wasted when Mzuzu University Library made the move to Koha 3.0.

Use of Koha has become an integral component of the Mzuzu University faculty of Information Science and Communications (<http://www.mzuni.ac.mw/Infor.html>). Diploma and Bachelor degrees in Library and Information Science include substantial hands-on training with sophisticated integrated library systems, in this case Koha. Along with the theory of MARC21, for example, students experience real cataloguing. Even those who take up their training at one of the five remote library sites at teacher training colleges across Malawi that are part of this programme receive hands-on training with Koha.

In large measure this extended training programme has been accomplished through the generosity of GTZ (<http://www.gtz.de/en/>) which, through a separate scheme, provided the PCs at each location as well as IT staff to set them up and maintain them. These machines serve multiple purposes. They are Windows machines and therefore it was the Windows version of Koha 2.2.9 that needed to be installed on them. So that early experience of Koha 2.2.9 that MALICO propagated has already reaped some reward.

Of course it might be thought that these machines with Koha 2.2.9 on them are *merely* training

¹ We shall ignore, for the moment, the possibility that the installation documentation may not have been 100% accurate.

machines. Far from it. Since Koha uses international standards for its data, it has been a relatively straightforward task to enable the records produced remotely using Koha 2.2.9 to be incorporated in to the main Koha 3.0 database at Mzuzu University Library (more on this below). The cataloguing that the trainees undertake, even in the remote locations, is no mere exercise.

The integration of a FOSS ILS with a library and information science training programme brings immense benefits. First, it produces a broad cohort of future library staff that will be comfortable using the staff client for the chosen ILS. Second, it provides real-life cataloguing experiences for trainees, experience that might have taken them a long time to acquire in their first library position. Third, it shows clearly that FOSS in libraries can be a tool far beyond the mere cost saving that comes with the absence of a licence fee. This was helped, of course, by the creative combination of funding sources and programmes from complementary bodies such as eIFL.net and GTZ. All it takes is the vision to see the possibilities and the determination to carry it through.

Learning point: integrating a FOSS ILS into other programmes and projects within an institution can significant increase the base of knowledge and experience with the software available to the library in the future.

Data migration

As noted at the outset, Mzuzu University Library has more than 16,600 volumes in its collection. CDS/ISIS was used for the cataloguing and data storage. And while this system worked well, it was found on investigation that there were many human errors in the records that had crept in over the years. The decision to move to a new ILS always entails other decisions about data migration, staff training, skills enhancement, and more.

Migration of data to a new system can be a daunting task. In fact data migration is one of the key offerings made by ILS support companies. There are numerous Koha support companies that will, for a fee, migrate your data to your new Koha system. Usually this is part of a package deal on installation, migration, and initial maintenance. But for many eIFL.net libraries the economics of moving to a FOSS solution will not support this level of expenditure.

One possibility would be to take this opportunity to upgrade the skills of the library's technical staff in order for them to undertake the migration of the data themselves. In this way the migration becomes a double benefit to both staff and to the library. But rising to the technical challenge of migrating the catalogue data from a non-standard CDS/ISIS database to the MARC21 format, which Mzuzu University Library had chosen to use in its Koha 3.0 deployment, would not address the issue of the quality of the data itself.

Again multiple local factors come in to play in this decision. Mzuzu University has a ready cohort of young library trainees because of its Information Science and Communications faculty. And it was this, perhaps more than any kind of technical challenge, which tipped the balance against data migration. Instead the decision was taken to re-catalogue the whole of the Mzuzu University Library.

Re-cataloguing, from scratch, and entire university library is no small task. If the collection were over 100,000 volumes then perhaps it simply would not have been considered. But with less than 20,000 volumes the task, though large, looks manageable. Moreover the cataloguing process is streamlined within Koha. Z39.50 access to the Library of Congress can produce a base record in moments. Thereafter the additions to the record are merely those that are unique to Mzuzu University Library's use of the volume. Even with a small group of 4 or 5 cataloguers, the number of re-catalogued volumes that can be processed in a day, a week, or a month quickly grows.

Learning point: sometimes the most efficient route to a new catalogue is to start afresh.

And of course there are the additional benefits that go along with this cataloguing exercise. Over time a great many new librarians entering the job market in Malawi will be well-practised cataloguers, thoroughly familiar with MARC21, and importantly, very comfortable with the Koha staff client interface. These additional benefits could easily be seen to far outweigh any benefit, in terms of time and efficiency that might have been gained by taking a technical approach to populating the new Koha ILS database. And, finally, the “cleaning up”, so to speak, of the many human errors that had slipped into the legacy data over time sealed the decision.

Next steps

This ILS pilot is unique in that it is fully integrated into the goals not merely of its host library, but also the goals of the national library consortium, MALICO. In some ways that makes it an ideal exemplar of what eIFL.net promotes more generally. It may also make it difficult to replicate Mzuzu University Library’s success.

However, one clear lesson one draws from this pilot is its innovative approach to problem solving. When do you start an ILS migration? Here, they started, in a sense, even before they had taken on the task of being a pilot site for this project. The early exploration of Koha had laid the groundwork for success. How do you deal with the fact that your technical staff do not have some of the skills you need? Again, begin early and use a trial installation to provide the initial training. And finally, what should you do about your legacy data that needs migration? Here the answer was **not** to think of this as a library technology question but rather from the point of view of the university as a whole; that is what opened up the connection between the Information Science and Communications faculty and the data migration issue.

There are challenges ahead of course. For example, the bar codes used in the library from their CDS/ISIS catalogue were not transferable to the new Koha catalogue so they will have to be generated afresh. And there are questions about Koha itself that need addressing, such as how best to undertake customisation of the user interface or to ensure that Malawian currency can be used in the fines calculations. Fortunately the staff at Mzuzu University Library are increasingly comfortable with using the Koha email discussion list to seek answers to these questions.

Another set of questions are being asked by the library’s technical staff about the Debian server and its management. These include questions about best practice for backup of the database, automating processes, and more. Clearly what is needed is greater depth of knowledge in administering a Debian server. And here again, MALICO has led the way with an innovative combination of initiatives. The eIFL-FOSS programme recently offered support for those who would organise and run workshops focusing on IT skills and tools for library systems administrators. It will be no surprise to learn that Mzuzu University Library will shortly be hosting a 4-day training workshop on Debian GNU/Linux.

Learning point: take advantage of fundamental technical training opportunities whenever they arise.

Learning Points from the pilot

There have been numerous learning points from this pilot. A few may be unique to Mzuzu University Library or to MALICO, but most have wider application. They will inform our future efforts in promoting FOSS in libraries.

- A pilot library can serve as the leading edge in a potentially substantive consortium-wide migration to a FOSS ILS.
- It is advisable to give yourself enough lead-time for the evaluation of a new ILS.
- In order to learn new skills, libraries will often need to reach out to non-staff for initial assistance; the FOSS community is familiar with sharing skills and knowledge and can be appealed to for help.
- Complex systems often take many attempts initially in order to achieve a successful installation; do not be discouraged if your installation fails once or twice or even ten times; this is how systems librarians master new systems.
- Integrating a FOSS ILS into other programmes and projects within an institution can significantly increase the base of knowledge and experience with the software available to the library in the future.
- Sometimes the most efficient route to a new catalogue is to start afresh.
- Take advantage of fundamental technical training opportunities whenever they arise.

For further information on Mzuzu University Library's Koha activities, please contact Felix Majawa FPMAJAWA@mzuni.ac.mw.

For further information on eIFL.net write to info@eifl.net.