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The Future of the Library Management System

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ABSTRACT

Recent innovations have changed the way libraries operate; ICT now interacts with library tools and facilities. Previously, libraries dealt with printed materials and limited resources and services; but now, libraries at the global level are rich sources of globally provided expertise and information. The library has also explored the influence of emerging technology and changing social needs. The aim of this paper is to address some of these current trends.

1. Introduction

The Integrated Library System (ILS) is the lynchpin for library automation and is also called the Integrated Library Management System (ILMS). However, at the mid-winter meeting of the American Library Association, Marshall Breeding, a library technology guru and a significant writer in the field, anticipates its death (Rapp, 2012). This article explores developments in LMS and examines whether the above argument is valid.

Multifunctional, adaptable software applications that allow libraries to control, list and distribute its materials to patrons are briefly specified in Müller (2011: p.57). The LMS or ILS as it is listed here. The two-functionalities of the LMS are clearly encapsulated in this definition: backend, automating library administration and front ending, oriented exploration, allowing patrons to move around and use their selection.

Therefore, LMS software has complex and versatile specifications. The time when many libraries moved from their legacy applications was at its heyday in the early 2000s.However, the criteria became more nuanced as libraries grew to meet the needs of the 21st century. All libraries must supply the client anytime, anywhere, and more on every network, including mobile devices, which they choose to select.

Public libraries must sell themselves, and resources must be shared across a dynamic subsidiary and branch structure. Academic libraries must view a broad variety of electronic items that are often deployed by large consortia to provide easy access to them. They will frequently have to store the work of their employers in institutional warehouses.

Thus, it is no surprise that Müller qualified his description by calling on users to not only analyze efficiency and effectiveness, but also their versatility and adaptability to current and future demands by employers (Müller, 2011: p.57).

Breeding agrees but wonders whether traditional LMS systems are up to task. In fact, the services offered by modern academic library in Midwinter ALA are not integrated or comprehensive, "it takes maybe eight or nine or ten different application … to do the things that academic libraries do." (see also the following) (Rapp, 2012).

2. The proprietary market

The size of the LMS market, as calculated by the companies' gross revenues, was estimated to be $630 million in 2010 (Breeding, 2011). The largest companies, in terms of revenue, are SirsiDynix (http://www.sirsidynix.com/), Ex Libris (http://www.exlibrisgroup.com/category/AlmaOverview), and Innovative Interfaces (http://www.iii.com/).

One of the biggest current challenges these companies face is that libraries all over the world are seeing their budgets shrink. Thus money is just not available for brand new software, or updates. What money they do have is likely to be spend on discovery products, with 50 per cent of the materials budget going on digital content (Rapp, 2011).

The latter challenge was faced by establishing partnerships with exploration products and thereby making their products more appealing. For eg, SirsiDynix recently announced an agreement (22 June 2012) with EBSCO Publishing for easier inclusion of EBSCO Discovery Service in the previous eContent Service.

Speaking with the Library Journal at a round table to speak about the future of LMS (Rapp, 2011), John Yokley of PTFS commented that the workflow capabilities for library systems are combined with digital goods.Several speakers were able to point out in tight times where workers are no longer here to do the repetitive job, the growing importance of automation.

Another trend is for further integration into libraries, as already seen in consortium building. The shared LMS is currently being piloted by Welsh libraries (see http://www.whelf.ac.uk/initiatives.shtml).

LMS businesses are aware of the need for versatility to give open access to the programming interfaces code of their application (APIs). This allows the interoperability of software and adaptability to the needs of the organization.

An example of a provider that closely communicates with a bibliothèque is the Queen's Library daVinci Open Library Platform, an LMS whose architecture includes components of the Virtua LMS VTLS, Drupal content management system and several other software packages (Rapp 2012). However, the most significant development is the transfer of resources to the cloud once locally. The huge growth in open-source systems and the battle of proprietary systems through the advancement of cloud-based services shows this (software-as-a-service, or SaaS).

3. Software-as-a-service (SaaS)

Nearly every new development in LMS is in SaaS-products and services (Breeding, 2011). With many main functions and workflows that the API-based LMS cannot easily cope with variations, SaaS is versatile, allowing new requirements to be more sensitive. The definition for SaaS is therefore defined by Cho (2011, p. 380), which is applicable in many industries and not only libraries:

SaaS is a way of owning, providing, and maintaining software remotely by a software vendor who provides the software to multiple customers using a [web-based] platform.

There are serveral advantages of SaaS:

- Cost: SaaS can be purchased on an on-demand basis, and the customer only pays for what he or she uses.
- Manpower: because the user does not own the software updates – SaaS services are hosted on the Internet – the library can cut down on manpower costs.
- Use of up-to-date business process software, capable of easily incorporating new functionality, as requirements shift.
- Graphical user interface, close to desktop interfaces: rich web applications, including flash, or Java, make this possible.
- Interoperability: SaaS can be combined with other systems, enabling the user to access other networked Library services.
- Interoperability: For a case study of a SaaS –based library LMS, see Cho (2011).

Some LMS products are fully produced according to SaaS. Users have access to advanced functionality without costly hardware, software, storage and networking components.

- Cybrarian (http://www.cybrarian.in), the first of its kind in Asia.
- Ex Libris's Alma (http://www.exlibrisgroup.com/category/AlmaOverview).
- Biblionix's Apollo (http://www.biblionix.com/products/apollo).

Other products are available either as an installation or through SaaS.

- VERSO (http://www4.auto-graphics.com/products-verso-integrated-library-system-ils.asp),
- CyberTools for Libraries (http://cybertoolsforlibraries.com),
- SirsiDynix's Symphony (http:// www.sirsidynix.com/symphony) and
- Infovision's Evolve (http://infovisionsoftware.com)

4. Open source

Open source (OS) is a key trend in Web 2.0 – community-based, community-built software that is open to everyone in the community. In addition to the other advantages that are addressed in the following, the spirit of the OS is accessible and interactive with librarians.

One of the main advances in LMS is OS development. In the developed and developing world, libraries of all kinds – large and small – have either taken OS as their preference framework, or migrated from a proprietary LMS.

Speaking in 2011, Marshall Breeding claimed that even larger library organizations were abandoning proprietary LMS, and that open source had made a big dent in the latter's sales, with SirsiDynix and Innovative being especially hit.

An comprehensive study of 20 open source LMS systems has been carried out by Tristan Müller (Müller, 2011). First, it analyzed the communities under the selected FOSS systems in order to find those with an active culture that were more sustainable. The remaining 20 were then analyzed according to a list of 80 functional requirements.

Those which satisfied the most criteria were Koha (http://www.koha.org), Evergreen (http://www.evergreen-ils.org), and PMB.

Koha was considered the most popular (cf. Müller, 2011 pp. 52), with the implementation of two Marc formats, Marc21 and Unimarc, on a wide range of factors, including group size, number of consultants and service providers and their high integration level.

However, Müller points out that he does not propose an absolute but rather offers a set of practical requirements for libraries to review their needs (see Müller, 2011, p. 77).

Koha and Evergreen

The Katipo contact Ltd. for Horowhenua Library Trust, which was installed there in 2000, initially developed Koha ("gift" in Maori language) in New Zealand. It has since been adopted worldwide by libraries.

Koha consisted of OPAC and librarian interface for the catalogue, circulation, patron management, transactions, serials and reports for any standard library operation.

There is not enough space in this field to list the characteristics of Tajoli et al. (2011), Egujobi, Awoyemi (2012), Müller (11), and the company's website. There is more than enough room to find all its details.

In 2006, Evergreen was created for the Georgia Public Information Network for Electronic Resources consortium of libraries (PINES). Originally, 44 library systems with a single library card and a consistent set of rules were included in PINES.

As it was expressly designed to be used by a large consortium of librarians who have access to or change the database at any point in time (Helling 2010). (Dimant, 2010).

Benefits of open source.

There are many advantages of open-source applications.

- Next generation technologies, which are more likely to be based on them and able to cope with the full spectrum of traditional workflows, prints and electronics than proprietary systems (Dimant, 2010) (Breeding, 2011, Cho, 2011).
- Interoperability. The incorporation of software with other systems outside the library, such as learning management systems and other business support functions is simpler because of the software based on common and open standards.
- Flexibility: users have access to the source code, so they can adapt the software as they wish and to their own requirements.
- Cost: The OS is free, so no big investment is required. For small libraries and for developing countries, this is especially important. Dimant (2010) assumes that the

return of money for the investments made can be much increased.

- Support: support from a global community is available and you are not locked into a single supplier. Several support systems suppliers are available. As one librarian commented, Koha can be implemented even if IT is basic and funds are limited (Keast, 2011).

Several case studies recorded in Emerald journals testify to the flexibility of Koha, particularly with libraries that lack large resources.

- The reasons of Koha's choice of an educational college in Nigeria are defined by Egunjobi and Awoyemi (2012). Koha was appealing, since it was free to install and a wide group could provide support, with lack of resources both for IT as well as financing.
- In similar situation, Bissels and Chandler (2010) see similar advantages for the Royal London Homeopathic Hospital to Koha for their separate books. They had little capital and no administrative resources. They did not want to host an LMS flatly in their IT scheme. Koha offered a versatile approach that could be tailored to the development of their needs.
- Keast (2011) describes Koha's implementation by Australian health libraries, saying that remote users have had greater access to library resources than traditional systems would have been possible through open-source management systems. Not all experiences of Koha have been positive, however.
- Helling (2010) contrasted the issues of Koha and Evergreen with the implementation of the former and the option to move to the latter.
- Koha's versatility is on the positive side, particularly about various languages and characters.
- Chang et al (2010) write about Koha-Taiwan, which uses chinese characters and offers worldwide services to Chinese users.
- Shafi-Ullah and Qutab (2012) describe a Pakistani version of Koha, PakLAG-Koha, with multilingual support for different languages.

Kittens are free – but vet bills high.

Dimant (2010, p.663) wrote rather recklessly about the costs of free software – the time, infrastructure and supporting costs for employees.

Apart from the communities themselves, Koha and Evergreen have been created by a variety of supporting firms. LibLime, the main support company of Koha, is owned by Radical Technology Federated Systems (PTFS). A controversial edition of Koha was developed by Enterprise Koha, blocking the OS world's copybook (Helling, 2010, p.703).

Support for Evergreen can be obtained via Equinox, founded by its original developers in 2007. (Helling, 2010, p.703).

Keast (2011, p.30) quotes Breeding's service company requirements: data transfer, installation, setup for use with the hardware of the library, staff training, hosting, and local needs customization.

5. Conclusion

We have seen how OS systems have been greatly threatened by proprietary systems. We looked at Evergreen for the latter, which is especially suitable for consortiums and complex multi-site organizations, while Koha can be applied even when the IT base and the amount of funding are poor. The proprietary suppliers take their software production to the cloud end masse, not to be outdone.

Was Breeding right to predict the LMS's demise? Perhaps he was right in predicting the downfall of the API-based LMS as the only alternative, but the movement towards the cloud is overwhelming.

What we are also seeing is a trend towards structures that are more complicated and easier at once. More complicated in that user preferences put more and more constraints on the librarian.

Developments in LMS have made it possible for all libraries to have a good system, from the huge library consortia in the US to the small education library in Nigeria or the special library in the Australian outback.

This is software helping libraries to become truly democratic – knowledge open to all, which is what they stand for.

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