Open your mind!
Selecting and implementing an integrated library system: the open-source opportunity

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Abstract

AIM: The Belgian Health Care Knowledge Centre (KCE – Kenniscentrum / Centre d'Expertise) is a recently established government agency that conducts studies in the field of Good Clinical Practice, Health Technology Assessment, Health Care Services Research and Equity and Patient Behaviour, and includes a small specialized library. During its first year of existence, the catalogue of the library was held in EndNote: the need for an Integrated Library System (ILS) was urgent, but no specific budget was dedicated for buying such a system.

METHODS: We elaborated a wish-list and a selection procedure to guide ourselves in the following steps. We then searched for Open-source opportunities through various sources (journals, Web…).

RESULTS: From the wish-list, 2 serious candidates were pre-selected: Koha and PMB. After installation tests, PMB was chosen to be the KCE ILS. PMB was installed on a production server, fully parameterized (classification, authorities, users…) and officially launched in March 2006. The users enjoy the Online Public Access Catalog (OPAC), reserving and borrowing a book is easier; an alerting tool may also warn them about new books or journal issues; in a few clicks, records are exported to EndNote. The job of the librarian is simplified too: user management, downloading entries from other library catalogues through Z39.50, presenting recent acquisitions or specialized collections directly through the OPAC…becomes easier.

CONCLUSION: Thanks to the efforts of the open-source community, any library can now enjoy a serious ILS at no licence cost: the saved money can hence be allocated to the extension of the collection.

Introduction

The Belgian Health Care Knowledge Centre (KCE – Kenniscentrum / Centre d'Expertise) is a government agency that conducts studies in the field of Good Clinical Practice, Health Technology Assessment, Health Care Services Research and Equity and Patient Behaviour. It was created in 2003 and started its activities in 2004. A small specialized library was created to support the scientific studies

During its first year of existence, the catalogue of the library was held in EndNote, the standard Personal Bibliography Management System at KCE. This choice allowed the person in charge of the library to hold the books and journals in a convenient database. Records were standardized; a Z 39.50 connector allowed to download already made records from the National Library of Medicine (NLM) or the Library of Congress (LOC).

But EndNote is not aimed at managing a library. It lacks some cataloguing functions, e.g.: you have to create a separate record for each exemplar of the

same item. There is no loan/borrow module: loans were paper-based. To identify a book, you may browse by title or author, but browsing through categories is not possible. A powerful search function is available, but without an OPAC, users had first to download the latest updated version of the catalogue from the Intranet which was quite annoying.

The need for an Integrated Library System (ILS) became urgent, but no specific budget was dedicated for buying such a system.

Without funding, two options were to be considered: continue with EndNote and develop a web database from scratch to provide some kind of OPAC, or look for an ILS without license cost. The second option was more attractive. The open-source movement provides lots of solutions for libraries [1-4]. Open-source ILS are generally web-based which is easy to maintain: librarians as users reach the catalogue through their usual browser [5]; no installation or update on the client PC's is necessary; the catalogue can be easily shared on the Internet. Such software meet the recommendations of the Belgian federal government for the use of open standards or open specification [6].

Objective

The objective of this project was to identify usable Open-source ILS and evaluate if one could suit the KCE needs. If so, the software would be installed and used to hold the KCE collection and allow users to easily identify and borrow books.

Methods

We first elaborated a wish-list: which functions would be necessary? Which function would be a nice to have? Considering the hardware already in use at KCE, some technical criteria's were also identified (full list available on request).

We then elaborated a selection procedure to guide ourselves in the following steps. Considering the wish list and the technical criteria, all identified software should be evaluated thanks to the available documentation and, if available, demo version. The software that met our criteria would be retained on a short list and installed on a test server. All retained software would then be tested regarding the wish list. The best software for KCE would then be selected and installed on a production server.

The search for Open-source ILS could then begin. We used some journals, but mainly the Web (see Table I).

Results

Selecting the software

After the search round, 9 Open-source ILS were identified (see Table II). We then had to create a short list with the most suited ones.

The first criterion was maturity. OpenBiblio and Evergreen (Open-ILS) were still in beta version. We decided to drop them from the list.

The second criterion was the language. KCE has chosen English for her software. All experts are Dutch- or French speaking, the support of these languages is thus an advantage. Gnuteca was only available in Portuguese; we dropped it from the list.

The third criterion was the operating system: KCE server uses Windows 2003 Server. Only 4 software claim to be Windows compliant and provide an installation protocol: Emilda, Koha, phpMyLybrary and PMB. Even being defined as platform-independent, the installation of Emilda on a Windows computer would require hard work and coding skills according to the Emilda website [7], we dropped it from the list.

The fourth criterion was the assistance. We looked at the mailing list archives or forum for Belgian users; and the availability of commercial support was also recorded. The contacts found in the Koha forum declared that they had only evaluated the software. A commercial support is available by three French commercial firms. We were not able to identify Belgian users of phpMyLibrary, nor commercial support in the surrounding countries. PMB was already in use in Belgium, a presentation was made at a session of the ABD-BVD, a national association of documentalists [8], and several other Belgian PMB users were also identified. A French commercial firm provides services in Belgium.

The fifth criterion was the interface. PMB and Koha look quite intuitive. phpMyLibrary looks less attractive for non-librarians: the cataloguing module implies a knowledge of the MARC codes. Added to the weakness of local support, we decided to drop it from the list. At this step, only two candidates were remaining in our short list: Koha and PMB.

Koha claims to be the oldest open-source ILS. It was developed in 1999 by an IT company for the Horowhenua Library Trust in New Zealand [9]. It is used by hundreds libraries around the world and can handle more than 200 000 records [10].

PMB (formerly PhpMyBibli) was created in 2002, since 2004, the project is supported by an IT company [11]. It counts hundreds of users around the world and can handle more than 300.000 records [12].

The next step was the installation of the two candidates on a test server: a standard PC running Windows XP professional sp2.

Testing the software

We first tried to install Koha on a PC pre-fitted with Apache, MySQL and Perl. The installation did not succeed due to a problem with the Perl module. We then used XAMPP, a package that installs and configures Apache, MySQL, PHP and Perl on a Windows computer. The same problem was encountered. Without any knowledge of Perl, we were not able to solve it. We asked for help to the French and English forum but did not receive any constructive help. It was said that installing Koha on Linux is really easy…. Due to lack of time, and considering the results of the PMB installation, we decided to stop with Koha. It must be noted that Berizzi et al. did not succeed either to install Koha; the intervention of 3 computer specialists did not helped [5]. Even on Linux, a trained ICT is required to help the librarian with the installation of Koha [13].

The installation procedure for Windows suggests the use of EasyPHP, a package that installs Apache, MySQL and PHP on a Windows computer. This procedure is indeed really easy. But EasyPHP is for development purpose only; it is not suited for a production server due to security issues. We thus had to install Apache, MySQL and PHP separately. Several tests with various combinations of versions of Apache, MySQL and PHP were necessary before succeeding in the installation of PMB. The help of the PMB forum, which is not really responsive, and the mailing list, which is the place to be, allowed us to resolve the main problems and identify the right versions of software (PHP5 is not supported).

We could then check all the functionalities and test the configuration suited for KCE. Our classification system and indexing terms were integrated in the software. The cataloguing module, with the Z 39.50 connection and the circulation module were also tested; the acquisition module was not available at that time (version 2.13).

At last, we tried to transfer the records from EndNote to PMB. Our plan was to use the XML import function of PMB. We asked the mailing list for the XML structure description and created a specific output style to generate the XML file. The XML file was converted by PMB into a MARC file. But the MARC file failed to import correctly. The importing was tested with a MARC file generated by PMB: it worked well. We asked thus the help of the mailing list, and a developer proposed to analyse the XML file. Unfortunately, we did not get further answer concerning this problem.

Due to lack of time, we decided to use the Z 39.50 connection to download the records. Unfortunately, the connectors to the NLM and LC were not fully functional. We had thus to work with SUDOC (French collective catalogue) and manually complete the records. Hopefully, KCE counts only some 400 records, such an option was thus possible.

At the end of the test round, only one software passed our technical, functional and installation tests: PMB. This software was mature, possessed all the needed function for KCE; the 14 criteria to evaluate Open–source software were met (see Table IV). Other studies had also identified PMB as a serious Open-source ILS [5, 14]. At last, a growing community was developing in Belgium. Even considering the problems encountered with the transfer of records, PMB could be adopted by KCE.

Using the software

Thanks to the protocol developed for the test server, PMB was installed on the production server quite easily. Since the production server is running Windows 2003 server, the installation protocol had to be adapted a little. After the basic parameterisation, we could transfer the necessary files from the test server (records, classification, authorities, and users). We also customized PMB a little, creating a specific layout (see Figure 1) and adding the export in EndNote format functionality. The new library catalogue was officially launched in March 2006.

The users enjoy the OPAC: the latest acquisitions are directly shown. Finding or reserving a book is far easier than before. In a few clicks, records are exported to EndNote.

The job of the librarian is simplified too: the circulation module makes loans easy. The Z 39.50 connector, although not perfect, helps to get new

records in. Other functionalities should also be investigated: activating the SDI module to warn users about new books or journal issues is our next task, presenting specialized collections directly through the OPAC will also be considered.

Discussion

Acquiring an Integrated Library Management System at no license cost is possible thanks to the effort of the Open-source community. Choosing Open-source software is not buying a pig in a poke [15]. Open-source software is free, but can also be stable and secure [16]. Adopting Open-source software is a realistic option adopted by some administrations, but also by commercial firms [17].

In this work, we identified several interesting Open-source ILS and passed them through a selection procedure. Our experience shows that a librarian, with good computer literacy, can choose PMB as first ILS. The latest version (2.2) added the acquisition module and a multi-thesaurus module which make PMB sexier. For the upgrade from another ILS, our experience was not convincing. Gass [18] had to use a quite complex procedure to transfer some 7000 records from Socrate. For such an operation, a time consuming work could be necessary. If you dispose of some budget, a commercial firm may help you for this.

At KCE, the ILS is not being used by experienced librarians. But, in other situations, the MARC codes used in the cataloging interface of phpMyLibrary would not be a problem. This software could thus be an interesting option: it is used in several countries, supports English but also Spanish, French and German. Given time, we would maybe have succeeded in installing Koha. This software has received several distinctions and is widely distributed; commercial firms may also provide support for it. If the librarian is experienced with the Linux operating system, the choice will be wider. All the other identified projects should also be carefully considered since most have already good characteristics and all evolve continuously [19, 20].

Embracing Open-source software is also getting in touch with a community of users. Our experience was contrasted: some questions did not receive answers, but we did received help for the customization of PMB, letting us providing a better service to our users. The Belgian community settled around PMB is still growing, and live meetings already occurred.

Using Open-source software supported by a commercial firm may raise questions. Such a model gives a certain confidence that the software will continue to develop and that the ILS installation project will be successful. On the other hand, the firm lives on services provided for the software. For ILS, these services are mainly installation, hosting or help with migration. When you need help on those aspects and ask the forum or the mailing list, maybe a risk of conflict of interest could arise. Another risk is that the firm transforms the software into a proprietary one, or stops its activities. In this case, the community must be sufficiently strong to support further development of the software.

Anyway, a library choosing for Open-source software will spare the amount necessary for the licences of a commercial product. The saved money could hence be allocated to the extension of the collection.

Conclusion

Thanks to the efforts of the open-source community, KCE can now enjoy a serious ILS at no licence cost. The software was installed and configured by ourselves within around 30 working days. Since its launch, this ILS has strongly ameliorated the experience of the users and the work of the person in charge of the library. Choosing for an Open-source ILS is thus an option that must seriously be considered.

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Appendices

Table I: Search strategy aimed to identify open-source ILS

Specialized journals	Archimag, Cahiers de la documentation
Use of Web portals	ABD-BVD.be, EAHIL.net, ENSSIB.fr, FreeBiblio.info, OSS4LIB.org
Search the Web	"Open-source ILS", "open-source library management system", "sigb open-source"
Search the Web	Using the name of already identified ILS

Table II: Open-source ILS identified

Software	Version	URL
Avanti MicroLCS	1.0	http://www.avantilibrarysystems.com
Emilda	1.2.3	http://www.emilda.org
Evergreen (Open-ILS)	1.00 Beta	http://www.open-ils.org
GNUteca	1.6	http://www.gnuteca.org.br
Koha	2.2.4	http://www.koha.org
Learning Access ILS	?	http://www.learningaccess.org
OpenBiblio	0.5 Beta	http://obiblio.sourceforge.net
phpMyLibrary	2.0.4	http://www.phpmylibrary.org
PMB	2.1	http://www.sigb.net

Table III: PMB and the 14 criteria to choose an open-source solution (from Gharsallah [21])

Criteria	Comment	Result
Utility	PMB fits our needs	Yes
Maturity	They are more than 100 users of PMB all over the World; since 2004, a user community has developed in Belgium	Yes
Documentation	3 user manual are available	Yes
Appropriation	This criteria was not met, but Apache and MySQL are well documented and internal resources could use them with little formation	Not really
Security	PMB uses Apache and MySQL who are quick to resolve security issues.	Yes
Interface	The interface is intuitive even not perfect.	Yes
Assistance	The mailing list is responsive, a Belgian community has recently settled, a commercial firm exist to support PMB, other open-source firms could also help with the software	Yes
Flexibility	MySQL allows multiple users	Yes
Generic	This criteria is not really suited for an ILS	N/A
Integration	No web server was used at KCE, the standard SQL server was Microsoft SQL server	No
Norms	PMB follows IT norms and Library norms	Yes
Easiness of deployment	PMB is easy to deploy	Yes
Easiness of administration and supervision	PMB is easy to administrate	Yes
Code liability and robustness	The literature did not gave any doubt on this (except for the comments that are often in French)	Yes

Figure 1 : Screen copy of the OPAC, users may search for books, or browse the classification. Last acquisitions are directly available. A customisation allows to export selected references in EndNote format.