Introducing a Working Prototype of an Open Access Platform Built Discovery (Electronic Resources Management) System (ERMS): a Case Study of a Nigerian University Library

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Abstract:

Introducing a working prototype of an open source discovery system to a higher educational institution presents an opportunity for technology adoption evaluation, which may be useful to other institutions. This paper presents the experience of the introduction of a working prototype of an Electronic Resources Management System (ERMS), a system built on ABCD software, to the University of Jos (Unijos) Library, Nigeria. The introduction of the system to Unijos Library serves as a pilot to the introduction of the system and ABCD software to libraries in Nigeria. The ERMS was built on the ABCD site module and it was presented to two categories of prospective users and the Server Administrator at the University Information Communication Technology (ICT) Directorate: firstly, to the Library staff who will work with it from the back end, to the students who will make use of the front end and, lastly, to the Server Administrator who will configure the system for the Web. At each presentation, participants were allowed to raise observations, suggestions, and make constructive criticism of the system. Participants evaluated the system based on motivation, user-friendliness, future expandability, cost implication, search results order and functionality matters; the evaluation results were positive. All participants at both presentations supported the adoption of the software with a suggestion for improved site colour combinations. Eventually, the Library Management requested that the ERMS be installed on another computer that would be made accessible to all stakeholders for a stipulated period, so that they could further study the system and give more useful suggestions before the system would finally be implemented.

Keywords: discovery system, University of Jos Library, ABCD software, electronic resources management system, Nigeria.
The Institutional Perspective/ Problem Analysis

University of Jos is a multi-campus Federal institution with three campuses across Jos, Plateau State, Nigeria. It started as a campus of the University of Ibadan, Nigeria in November, 1971 and was made a substantive university in 1975 (University of Jos, n.d.). The University of Jos Library was established in February 1972 when the institution was still the Jos campus of the University of Ibadan (‘University of Jos Library’, n.d.). Prior to the introduction of the discovery system, the university never had a dedicated system for the management of its electronic resources. The resources are only listed with brief descriptions and hyperlinks on the University Library webpage. The organization of these resources is therefore faced with the problem of some faculties having very long lists of resources, especially for the open access resources, which require users to do a lot of scrolls before they could access some resources - this can be cumbersome and time consuming.

Figure 1: Listing of University of Jos Library’s Subscribed Electronic Resources (Electronic Databases)
The Software: ABCD

ABCD is an acronym for Automation of libraries and Centers of Documentation. It is a suite of software covering all library and documentation centers’ functions which components include:

- Central module: database creation and management, cataloging, import/export, acquisitions, loans, statistics
- Serials Control (SeCS-Web) module
- OPAC and Site (iAH and Site) module
- Advanced loans module (EmpWeb)
- Digital library

ABCD is ISIS-based and all data are stored in ISIS-databases (De Smet, 2013). However, only two of these components (central module, and iAH and site) were employed for this project.
Figure 3: ABCD Central (Database Creation and Management) Module

Figure 4: OPAC and Site (iAH and Site) Module
Figure 5: ABCD Central (Cataloguing) Module

Figure 6: ABCD Central (Loan) Module
Figure 7: ABCD Central (Acquisition) Module

Functionalities of the System (ERMS)

The system is equipped with important functionalities which include:

- **Network**: This consists of a set of links to other websites related to the University Library.

- **Metasearch**: This enables the user to conduct a free query or a query by subject over different information resources included in the site.

- **Information Sources**: This provides links to specific local databases in the site. Users can search using free form (basic search) or advanced search with index searching.

- **Scientific Literature**: This provides link to open access scientific platform such as SciELO - Scientific Electronic Library Online

- **Google Scholar**: This provides opportunity to search scholarly works by author or subject.

- **Chat with a Librarian Feature**: This is incorporated into the system to connect users to a live chat with a librarian, a platform to leave a message or request call back and a knowledge base.

- **Simple and Concise Interface**

- **Social Media Integration**: for sharing and liking the ERMS on social media

- **Languages**: The system works in English, Portuguese, French and Spanish. Other languages can be added (e.g. Dutch, Amharic and Sinhalese are currently being produced)

- **RSS Feed**: links with other university and University Library news.

- **Google Analytics or Piwik**: This helps to keep statistics of visits to the site [will be available when Web configured]

- **Google map**: Incorporated for description of and direction to the library location.

- An easy-to-use ‘Content Management System’ to create/manage this Site.
Figure 8: The Homepage of the Proposed University of Jos ERMS

Figure 9: An easy-to-use ‘Content Management System’ to create/manage ABCD Site
Figure 10: Subscribed Electronic Databases Search Interface on the Proposed ERMS

Figure 11: Harvested Open Access Resources Search Interface on the Proposed ERMS
Figure 12: Sample Search Hits on the Proposed ERMS
Two databases were created in the ABCD Central module for the University of Jos (Unijos) Library. One for the subscribed electronic databases and the other for the open access resources received from the EIFL (Electronic Information for Libraries). The possibility to create local/specific databases is one of the outstanding features of ABCD as a library system. A new database was created from scratch for the subscribed electronic databases while the
database creation for the open access resources was based on an already existing DOAJ (Directory of Open Access Journals) database but with many adaptations to align the database with the structure of the received excel files of open access resources.

The open access resources which were received as excel files were converted first to Comma Separator Values (.CSV) using Libreoffice Calc and finally to .iso (ANSI) file (using the Master / Xross-reference (mx) tool) before being imported into ABCD. Databases creation respectively involved defining the fields using the Field Definition Table (FDT), showing how the fields should be indexed using Field Select Table (FST), and defining how the values will be displayed with the Display Formatting (DF) Language. The advanced search form (cataloguing module) was used to allow for quick and/or efficient identification of a specific record for editing by the cataloguer or administrator and at the OPAC, as the advanced search form. The “Configure Database in IAH” was used to configure the database to be accessible by ABCD IAH (OPAC) interface. Databases were initialized before records were entered/imported and finally and an inverted file was generated to enable searchability of records at ABCD Central. The ABCD site was customized to suit the University of Jos Library needs.

Though there is already a database of Directory of Open Access Journals in the ABCD demo, a preliminary investigation shows that a substantial number of the Unijos harvested open access resources (courtesy of EIFL - Electronic Information for Libraries) is not available in the searchable ABCD DOAJ database. It is on this note that ABCD was adopted to create databases of electronic resources (subscribed and open access) where users can search and access concise information, the description about a resource, and the link to its website without the boredom of long scroll up and down a webpage. These databases are published through the ABCD site module. In the very near future, the University of Jos Library website would be linked to the ABCD site. The system was customized to make it more user-attractive and more of an information discovery tool for library users, taking into consideration the fact that the library’s target users are mostly youths who are fond of web applications.
The system was presented to two categories of prospective users and the Server Administrator at the University Information Communication Technology (ICT) Directorate: firstly, to the library staff who will work with it from the back end and at another time, to the students who will make use of the front end and, lastly, to the Server Administrator who will configure the system for the Web. In all the cases, participants evaluated the system based on motivation, user-friendliness, future expandability, cost implication, search results order and functionality:

**Motivation:** Participants demanded to know the motivation behind the initiative. The presenter reminded them that so far, there has never been a dedicated system to manage the University of Jos’s electronic databases/resources and that the University Library points its users to the library electronic resources (subscribed and open access) only through the library webpage. The open access resources are harvested and organized (with names, description and links to resources’ websites) on the library webpage based on faculties as the library operates subject librarianship. The organization of these resources is therefore faced with the problem of some faculties having very long lists of resources, which requires that users do a lot of scrolling before they can access certain resources. This can be cumbersome and users and staff at one time or another complained about this. ABCD was therefore identified as a solution to this problem.

**User-friendliness:** Participants evaluated the user interface and suggested inclusion of more graphics and some improvement in the colour combinations.
**Future Expansivity:** Participants were curious about the possibility of future addition of records to the system after its adoption. The presenter assured users that there is provision for robust expandability of records in the system via the ABCD Central module and its capability to import ‘CSV’-formatted files.

**Cost Implication:** Participants wanted to know the cost implication of acquiring the software. The presenter made them understand that ABCD software itself is a free and open source software but the professional (many operators) version of the co-opted chat software (livezilla) would be available at an affordable cost. Livezilla one-to-one open source chat software is co-opted in the discovery system to enable users to connect to, leave a message for, or even chat with a librarian live. The only cost in sight will be the cost of implementation (hardware, human resources) and internet connectivity.

**Search Results Order:** Participants cared about the order in which search results are displayed in the system. The presenter noted that search results are displayed based on the criteria set by the searcher. The hits are arranged from the most relevant to the least relevant.

**Functionalities:** All evaluators commended the functionalities of the system. A senior member of library staff noted: “The architecture, operability and robustness of the software which gives hits that are most relevant (eliminates redundancy) are good attributes of the software”.

**Table 1: Evaluation Approaches and Responses**

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<tr>
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**Results**

All evaluators supported the adoption of the software with a suggestion for improved site color combinations. Eventually, library management requested that the ERMS be installed on another computer that would be made accessible to all stakeholders for a stipulated period, so that they could further study the system and give more useful suggestions before the system will finally be put in production mode. This was done and all suggestions were analysed and applied where necessary. Presently, the system has been adopted and now awaits full implementation.

**Discussion**

ABCD-Site organizes information in a structure that integrates and interconnects reference databases, specialist directories, events and institutions, a catalogue of the information resources available on the internet, collections of full texts, along with normal ‘widgets’ like Google Scholar, Facebook, etc.

The space of ABCD is, therefore, a dynamic and decentralized network of information sources based on which it is possible to retrieve and extract information and knowledge to support decision-making processes (‘ABCD Site Manual’, n.d.).
By the time the new system is fully deployed, the library staff - especially the subject librarians and users will be trained on its use. Library staff and users will also be given initial and continuous technical support to ensure that the system is maximally exploited. The University management will be informed of the deployment. Based on past experience, it is strongly believed that the University management will support and commend the system.

**Factors Not Mentioned in the System Evaluation Responses:**
Technical issues like the provision of hardware infrastructure, technical support, disaster recovery planning and sustainability were not mentioned in the evaluation responses. However, steps will be taken to consider these in due course.

**Conclusion**
Obviously ABCD is an all-encompassing system for libraries based on its numerous capabilities of which database creation is a major one. As it has been proven, it also allows for flexibility and dynamism. That is, it allows for the modification of the site to make it look more of a library website and of course, user-friendly. The ABCD based discovery system will therefore ease the management of and accessibility to the library’s electronic resources.

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