

New generation Integrated Library Management Systems: shifting gears and standards, and the philosopher's stone

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Libraries have traditionally been connected with scientific research. Developments in the methods and tools employed by researchers have always had an immediate impact on the workflows and services of research and academic libraries. As scientific research has become data-intensive, linking, exploring, and analysing big datasets lies at the core of modern science. What's more, the constantly rising need for digital content has greatly affected the design and management of a library and its resources. For instance, in the last decade, the portion of a library's budget spent in covering subscription fees of digital resources has more than doubled. The traditional Integrated Library Management System (ILMS), the tool that connects researchers to library resources and services, initially designed for the management of print collections, often fails to cater for the diverse material modern libraries collect. This article will briefly investigate the current status of ILMSs, explore the available next generation systems, module by module, and conclude that, similar to the search for the philosopher's stone, new systems have not yet brought the all-encompassing solutions that they promise. Implementation of a proper ILMS remains but a game of compromises and customization.

Current status of ILMSs

In the 1990s, a cycle of transition started in library automation development and implementation reflecting the evolution of the information industry at the time. The majority of research and academic libraries moved towards automating access to their collections, alas not in a homogeneous manner. The evolution of web 2.0, however, the convenience of the relevancy-ranked search results promulgated by Google, and the convergence of media industries is urging Libraries and ILMS Vendors to redesign the ILMS. Library websites offer access to unconnected silos: electronic-journals, the catalogue, databases, subject guides, ambiguous discovery services, all accessed separately. Moreover, eBooks have entered the library stream, while the dominance of print

collections is gradually receding – their importance cannot be underestimated however, especially for research/academic libraries. Library workflows have also been changed to accommodate for these changes. Information services continuously expand to incorporate closed and open access digital resources; simultaneously, the number of library staff is steadily decreasing. Specifications for a new library management system put forward by Libraries are long, detailed documents with necessary or desired characteristics; what libraries are really seeking though, is a new model of library management, which no new system has, up-to-now, provided.

New generation ILMSs

The rapidly expanding technological landscape, the current traits of peoples' online information behaviour and their expectations, along with the emerging trends of linked-data and open access are the basic factors in the design of the new, web-scale ILMS. Vendors in the ILMS market have developed or are now developing such systems; experience derived from *implementing* any of those new systems has not yet grown into a consolidated body of literature. Some distinctive features though are already discernible.

All new systems promise comprehensive electronic resource management. Silos are no longer present. Indeed, there is no reason in having multiple platforms and multiple metadata formats for the management of different types of library materials. The new ILMS is a Library Services Platform, i.e. library-specific software designed to automate the managing of diverse collections, as well as internal library operations, fulfillment of requests and delivery of services. It also combines open APIs to explore platform services, catering for extensibility and interoperability. What Vendors have traditionally done, is selling an ILMS – in our case the Services platform – as a series of modules which libraries can buy one at a time. It follows that the more modules a library buys, the greater will be the capacity of the ILMS. And this, of course, has financial implications. What's more, e-book management is currently not a part of the available Library services platform; eBook management subsystems do exist and are available as separate modules to be purchased and docked to the new ILMS.

The new ILMS has also been marketed as allowing for flexible metadata management (MARC, Dublin Core, VRA, ONIX, Bibframe etc.), moving away from locally managed metadata to globally shared workflows. Standards, however, are currently in a state of flux; new standards are being proposed to replace existing ones – MARC to Bibframe, AACR2 to RDA, ONIX, ODI and OAI. What's more,

requirements for digital content may bring about new, unforeseen metadata structures, which a new ILMS must accommodate.

New systems reflect the changes in library workflows. They boast of consolidating print, digital and electronic workflows and unified management. It remains to be seen whether the new ILMS design has incorporated the basic notion behind library work: workflows are not always linear as system developers would have us think. For instance, the acquisitions function may involve from 5 up to 8 people per transaction, with some of them residing outside the library (vendor, legal and/or finance department etc.).

Following the trend of software-as-service, almost all vendors offer “cloud-based” services. This move is a real game-changer; for the first time, server management moves from the Library to vendors. Globally shared data and metadata will allow the library to reach new levels of cooperation, enhanced service delivery and operational efficiency. On the other hand, hosting services externally does not deliver the savings it promises, while in some libraries it comes into conflict with information security policies set out by the parent organisations.

All new systems require a discovery layer, which integrates ‘seamlessly’ with the new ILMS. Based on index-based searching, it incorporates a unified search interface that promises to make ‘discoverable’ as many as possible of the resources a library offers, plus other, pre-defined sources. Relevancy ranking of results is included, as well as faceted search, social tagging of records, RSS feeds for searches, social media options, linking to open access content, plus all traditional OPAC features. As indexes grow in comprehensiveness and depth, the discovery layer, a module of the new LMS, promises library clients they can search a database, the catalog, eContent (eBooks, eJournals etc.), pre-selected subscription databases, search or metasearch engines and open access sources, all at *one* go, and then exploit the data available in manifold ways. The Open Discovery Initiative (ODI) has been established to investigate into standards and best practices for discovery services, since they are newcomers to the field. The discovery layer, an essential part of the new ILMS will considerably upgrade the library’s position in the digital information landscape, but librarians still need to examine whether it delivers on its promises.

Finally, as has already been stated, the cost of purchasing, implementing and maintaining a new ILMS is rather high; this is one of the reasons why such a decision is not taken lightly by libraries. The business model of the new ILMS is “ILMS as a service”. Libraries buy subscription to (modules of) the new ILMS from the Vendor and this subscription will theoretically have to run ad infinitum - I know of no library which would consider abandoning its core function. The looming continuous

dependence of the management of a core library service on a body situated *outside* the library organizational chart is cause for concern. The fast-growing open source ILMSs intend to offer a solution to the aforementioned issues. Following the trend of the open access movement, consortia of academic or research libraries manage the design and implementation of open source ILMS which are offered online, free of charge. Although many of these systems are still in the early stages of development, they promise to offer services almost similar to those provided by commercial ILMSs – with the exception of a discovery layer –, while their maintenance can be undertaken by a team of few in-house developers. Libraries geared towards an open source ILMS consider outsourcing the implementation and maintenance of such system, fearing its specificities – libraries of course will keep on having a strong say in the System’s future development and management. This potential cost should be added to the ‘hidden charges’ that some open source ILMSs propagate, e.g. participation in the consortium that develops the ILMS in order to ensure the project’s sustainability. In any case, the total cost would not be comparable to that of a commercial ILMS; nor will *one* open source ILMS become the system of choice for large scale implementation, affecting the breadth and depth of libraries’ collaboration on a national or international level. What remains is for librarians to closely examine whether the open source ILMS can indeed support complex workflows of a modern, hybrid library – and allow for new workflows to be devised and supported.

A new cycle of transition

The new Integrated Library Management System will change substantially the way libraries manage their resources and deliver their services. Moving into an era of interrelated knowledge bases, the ILMS will surely reposition the library in the information industry. Available systems, however, have not yet been widely evaluated and knowledge about their implementation and performance is only now being built into a body of knowledge that can be consulted. Relevant standards are being revisited or are drafted anew, while technological developments redefine the library management model. Implementation of a proper ILMS remains a game of reaching compromises and meticulous customization. For libraries that decide to go forward with choosing a new ILMS in such a period of transition, the golden rule set out in 1931 by S. S. Raganathan, the father of library science, still applies: “Save the time of the reader”.