THE SEARCH FOR A LIBRARY MANAGEMENT SYSTEM FOR THE LIB-INFOSPHERE

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Abstract

Current breed of LMSs do not have the capability to deliver library services in the new holistic information environment .The paper focuses on the core functionalities and major shortcomings are examined. The concept of a lib-Infosphere is introduced and some of the new technologies impacting on the delivery of library services in the digital era are discussed. In light of ever changing library information environment, emerging technologies, user expectations, move to web based services and to address the shortcomings of the current breed of LMSs, a tentative model of the new LMS is suggested.

Keywords: Library Management Systems/ Infosphere/ Lib-infosphere/ fragmented collections/ Interoperability/ Library automation/ Library 2.0

1. Introduction

The Information Services are operating in an era of continuously changing environment. Technology and social changes are presenting new opportunities, challenges and issues for libraries and information services. About 30 years ago we saw the automation (computerisation) of the library's manual routines and about 15 years ago we saw the mushrooming of library websites, web catalogues etc. It signalled the emergence of the digital library era. Today broadband, wireless connectivity, computing and communications technology have become an integral part of our working lives. Library users are very techno savvy. ICT is much in use in teaching, learning and research environment.

Current information environment is fragmented. It is presenting difficulties for the libraries to provide access to the collections in a coherent and unified manner. Library management systems have become the technical backbone, to deliver library services & manage its operations efficiently and cost effectively. But this backbone is becoming increasingly weaker to deliver the full required functionality of a library and to satisfy its users' information needs. Library management systems' suppliers have yet to make any concerted effort to respond to this turbulent information environment.

2. Background

The University of Salford library implemented its first Library Management System (LMS) in 1980 to automate its card catalogue followed by circulation module (CIRCO –

BLS) in 1982-83. The current LMS Talis was implemented in 1996, (by then, the University has grown considerably in size due to the merger of few colleges with the university). LMS manages the library internal workflows that include acquisitions, circulations, cataloguing, inter library loans / document delivery and periodical (print) management etc. The current version of the Talis bears no resemblance to the 1996 version of the Talis as it had been under constant development since its inception. However, it is felt that Talis and other LMSs in the market place still lack the ability & coherent approach to handle the management of heterogeneous information resources purchased, leased and developed by the library. Now at Salford we are spending more than 40% of our information resources budget on electronic collections but Talis can not manage electronic resources, which are dispersed widely.

3.   Modern Library Information Environment

Libraries' Information Environment is changing rapidly. Libraries are no longer warehouses of information that provide access to great printed troves of human knowledge. In a networked information environment, abundant information resources [2] can be found with a click of the mouse. Libraries can not expect their users to change their workflows to fit with the library workflows and spend their valuable time to discover information. Libraries will need to penetrate into users' infosphere & workflows through sophisticated resource discovery systems and web services. Secondly, collections to connections, shift has created self-sufficient generation of users, who operate in an autonomous manner and may not see a library as a centre of or even a small part of their infosphere. Library's role as a gatekeeper of a resources warehouse is diminishing but its role as a facilitator will be increasing.

Lib-Infosphere: The term Infosphere is said to have been coined by Luciano Floridi [1] to describe the changing information environment i.e. information scarcity to information overload and proliferation of tools to access this information anywhere and any time. "The infosphere denotes the whole informational environment constituted by all information entities (including informational agents as well), their properties, interactions, processes and mutual relations. It is an environment comparable to, but different from cyberspace (which is only one of its sub-regions, as it were) since it includes off-line and analogue spaces of information". [1]

Thus infosphere denotes the sum total of all the information available in all the formats. It is a global warehouse of information and a cohesive and integrated matrix of knowledge, including communications networks, access tools, databases and other sources of information.

Library-infosphere therefore may be defined as the network(s) of information surrounding a library and interacting with the users' (personal infosphere). Infosphere is a growing organism conforming to the Ranganathan's fifth law.

Depicted below is a library infosphere in the context of the University of Salford, which is probably no different from the many of the Indian libraries or libraries elsewhere in the world.

Lib-Infosphere
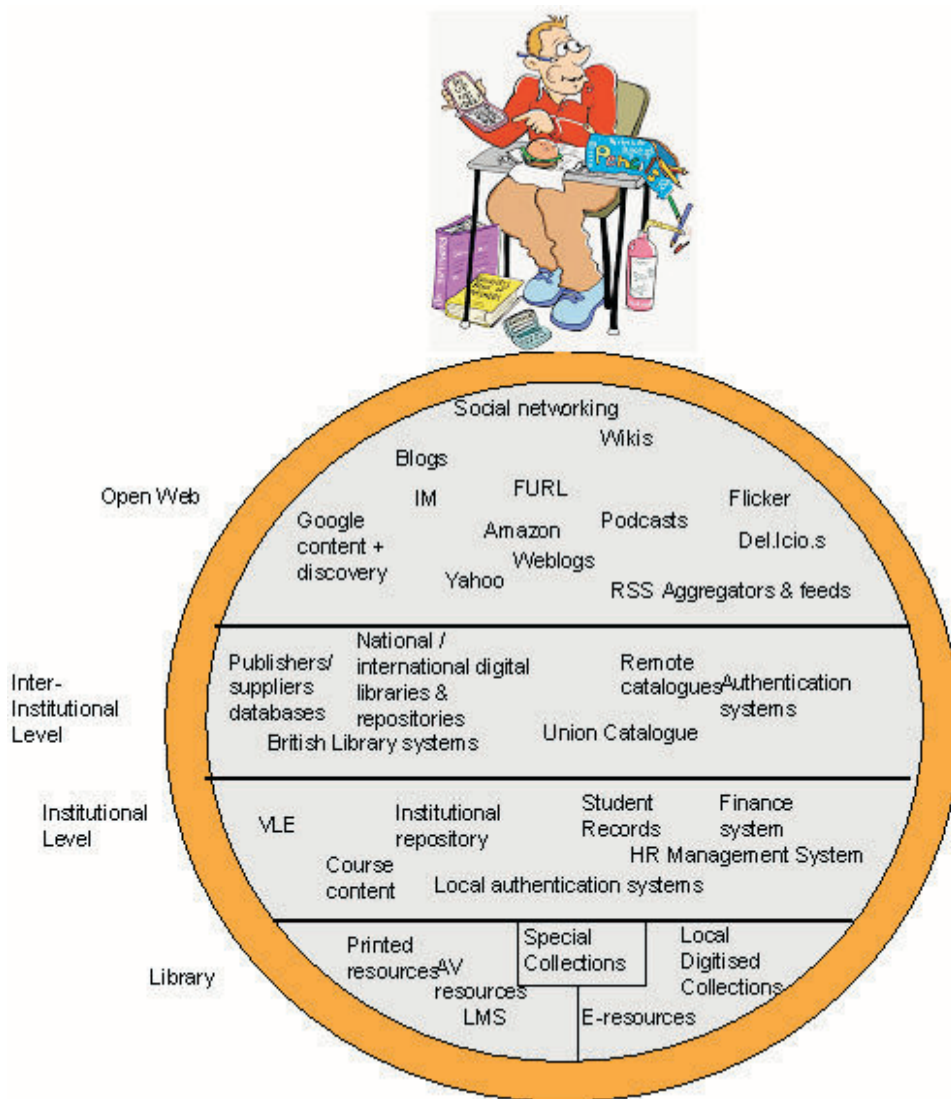
Modern library's business model has changed. Now libraries offer its services through purchasing, leasing and renting information resources and services from external suppliers. All these providers have very strict licensing terms and proprietary software. As a result library's resources and services are scattered all over the place resulting in

under-utilization and dissatisfied users. At Salford we have brought most of our electronic resources under one umbrella and provided a unified Meta search interface. However, LMS and Meta search system still work in silos. This requires double the resources to manage fragmented systems.

Secondly user infosphere is changing fast. In this new information environment users who are techno savvy come with high expectations for technology based resources. These Net-generation users demand resources made available to them at the point of need, through easily accessible interface(s), through the devices of their choice and possibly free of cost.

To survive in this dynamic infosphere, libraries need to pack and integrate information resources in new ways to embed/blend them within the learning management systems. LMSs are an ideal vehicle to make it happen.

4.   Declining popularity of the LMS

Current Library Management Systems, although play a very important role, are rather limited in the delivery of information resources and services. In the current form they are seen as stagnated, un-sustainable and resource (human, financial) sucking monolithic systems. They require high financial investment, offer poor functionality and are not innovative. Some of these aspects are discussed below:

4.1   Lack of Unified User Interface

Users prefer search engines (such as Google) as their source of information discovery as compared to the library catalogues & websites. Recently OCLC reported [3] that 89% of their respondents preferred the search engines while only 2% users selected library website (which includes library catalogue) as their vehicle for information search.

4.2   Some weak points of current online catalogues

Un-friendly user interface: the library catalogues used to be the most widely used retrieval tools but that is no longer the case. Current catalogues do not offer spell checker, thesaurus or any other tools to guide user through their search process unlike Google. Catalogues do not have some of the appealing features like intuitive design/ simplicity and powerful web services; hence they have become mostly irrelevant. Libraries are in dilemma whether to remove dedicated catalogue terminals with metasearch software/ portals. However, some suppliers are just beginning to address these issues in the new breed of online catalogues.

Another drawback of the online catalogue is the absence of the context and offers no personalization. If Amazon can provide the context e.g. "People who have read this title also liked these titles", why not a catalogue can tell that 'a user who borrowed/ consulted this tem also consulted those items'. Rather, a catalogue displays a bland list of items, without establishing any meaningful dialogue with users and is unable to display table of contents of books/ journals, book jackets, reviews etc.

Limited coverage: It tell users only about the print collections (excluding archives & special collections) in the library and neighbouring libraries and exclude vast array of resources; hence they are becoming either irrelevant or at best, last stop of a user's resource discovery process.

Lack of interoperability: Most LMSs exist in silos; they do not integrate with institutional and inter-institutional systems, resulting in the duplication of efforts, data and resources. This presents difficulties in sharing the data with other systems. This is inefficient and frustrating for the library staff and users.

5.   Emerging Technologies, Web 2.0 & Library 2.0

Libraries are driven by the needs of its users. The NET-generation users are conversant with the latest technology and expect library to be equipped with latest ICT and Web technology. Hence libraries can not afford to ignore the ongoing technological developments. Libraries must embrace the emerging technologies whole heartedly and use these as a vehicle for delivering their services.

Web 2.0 is the network platform, spanning all the connected devices. It offers a means to liberate locked data and services within web pages. Web2.0 brings revolution in social software. This social technology rather than pure technology can play an important role in shaping the future of library systems and services. Some of the technologies bundled under web2.0 umbrella include Flickr, wikipedia, wikis, blogs, weblogs, RSS aggregators /feeds, podcasting, Google AdSense, tagging etc. These technologies can offer significant help to develop improve and deliver library services. It is high time, LMS vendors and libraries took notice of these enabling technologies to deliver an efficient service.

5.1   Library 2.0

Library 2.0 concept is geared towards the needs and expectations of today's library users [4]. Library 2.0 is an attitude of a responsive library; it is not a technology. Library 2.0 facilitates and encourages the culture of customer participation. Library 2.0 seeks to provide services to users in their infosphere rather than from its buildings and websites.

There are many definitions of Library 2.0, but Meredith Farkas's definition is very comprehensive and self explanatory. "The idea of Library 2.0 represents a significant paradigm shift in the way we view library services. It is about a seamless user experience, where usability, interoperability and flexibility of library systems are the key. It is about the library being more present in the community through programming, community building (both physical and online) and outreach via technology, instant messaging, screencasting, blogs and wikis etc). It's about allowing user participation through writing reviews and tagging in the catalogue and making their voices heard through blogs and wikis. It is about making the library more transparent through its web presence and its physical design. We need to make the library human, ubiquitous and user centred. This involves a change in our systems, our web presence and our

very attitudes. It will take a lot of work for a library to be completely 2.0, but the idea should inform every decision made at the library." [5]
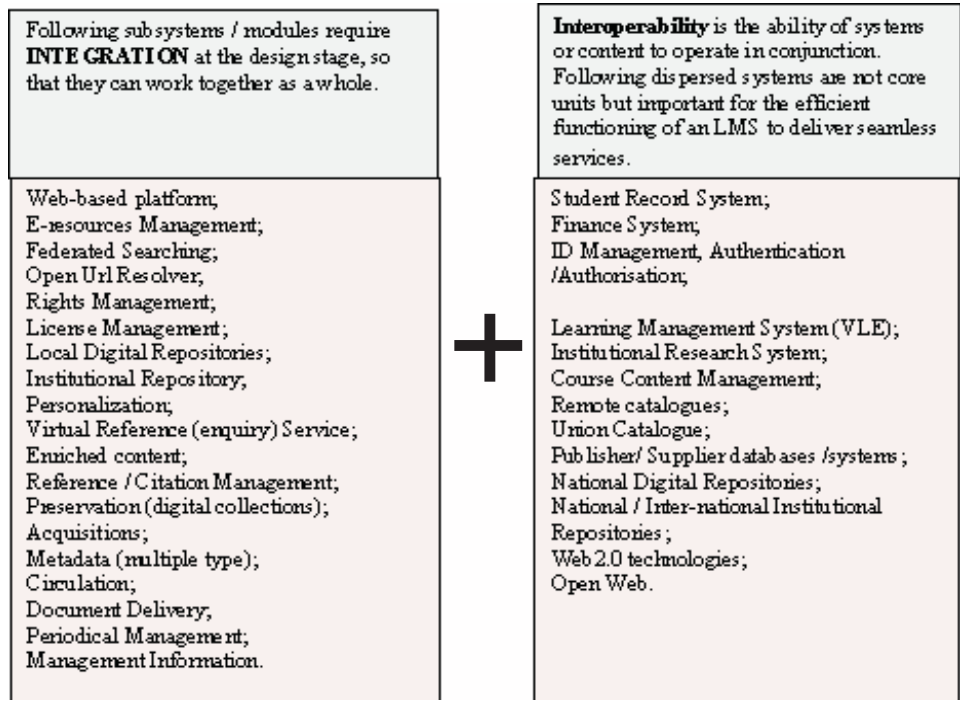
Cassey [6] sees Library 2.0 as a 'service philosophy built upon three things; a willingness to change and try new things, a willingness to constantly re-evaluate library service offerings; and finally a willingness to look outside of our own world for solutions, be they technology or not'.

All the above definitions convey the message that Library 2.0 is about constant change to meet the changing needs of its users and library 2.0 needs an LMS that is evolving and responsive.

Some people see Library 2.0 as hype or a new bandwagon. If this new concept is making us to re-evaluate our services and think about the new services from users' perspective then this hype is good for the library community.

6.   Potential Role of Library Management Systems

In the light of ever changing library information environment, emerging technologies and to address the shortcomings of the current breed of LMSs discussed earlier, a tentative model of a new LMS is suggested below. An ideal LMS   should offer some fully integrated modules and easy interoperability with others.

Following subsystems / modules require **INTEGRATION** at the design stage, so that they can work together as a whole.	**Interoperability** is the ability of systems or content to operate in conjunction. Following dispersed systems are not core units but important for the efficient functioning of an LMS to deliver seamless services.
Web-based platform; E-resources Management; Federated Searching; Open Url Resolver; Rights Management; License Management; Local Digital Repositories; Institutional Repository; Personalization; Virtual Reference (enquiry) Service; Enriched content; Reference / Citation Management; Preservation (digital collections); Acquisitions; Metadata (multiple type); Circulation; Document Delivery; Periodical Management; Management Information.	Student Record System; Finance System; ID Management, Authentication /Authorisation; Learning Management System (VLE); Institutional Research System; Course Content Management; Remote catalogues; Union Catalogue; Publisher/ Supplier databases /systems; National Digital Repositories; National / Inter-national Institutional Repositories; Web 2.0 technologies; Open Web.

Reasons for web-based LMS: They can be administrated from anywhere without the need for proprietary software on the user workstation. This makes maintenance and

updating the system much simpler and at lower cost. Web-based systems offer increased cross platform compatibility, irrespective of whether the one is using Apple Mac, Unix, Linux or windows workstation. They offer more flexibility, interoperability and more access.

Open URL Resolver to enable users to link from citations to full text and related electronic resources such as websites, search engines, internet bookshops and services defined by the library.

Interoperability Interoperability between institutional and inter-institutional systems is the key for achieving efficiencies and providing enhanced experience to user community.

An LMS has to interact with many different types of systems at an institutional and at inter-institutional level, but it is not always possible. It is high time for the LMSs industry, as it is in the consolidation phase itself, to consolidate various fragmented systems/ tools to help libraries manage their present & future information environment effectively. An LMS is an important part of the student learning process and a critical component of Virtual Learning environments (Learning management systems). Ideally, an LMS should be tightly integrated with all the university business systems such as student record, human resource management, finance management and VLE etc. Secondly, libraries rely heavily on inter-institution systems to share and purchase information resources and services. It is crucial for an LMS to communicate with national and international inter-institutional systems.

Openness: Future LMS should / can be made ever expanding by adding plug & play non-core modules without the need of substantial customization. Dream scenario would be the auto-configuration and auto-registration of the new functions.

Scalability: They should be scalable according to the needs of an institution.

7.   Able to handle multiple records formats not just MARC

An LMS should offer a robust bibliographic metadata infrastructure that should have sub-components for different types of metadata such as Dublin Core, RDF, EAD, OAI etc to enable metadata creators to describe information resources adequately by selecting an appropriate metadata tool.

8.   Integration or Dis-integration

Dempsey [7] and Roland [8] argue that the monolithic nature of the current LMS is a heavy financial and operational burden on libraries. They favour disintegration of the LMS. However, having managed systems for many years and having experienced difficulties of some stand alone modules (even developed by the same vendor), I favour integration & consolidation of technologies & applications discussed earlier into a new LMS for the following reasons:

- Managing separate components needs huge investment in staff time to customise applications and deal with different suppliers

- Disintegrated components might develop further silos not due to the technological complexities but due to human nature of territoriality.

Consolidation of the above components & services into an LMS would strengthen the position of the LMS as a valuable service & resource discovery vehicle. This view is also supported by Breeding [9].

In short an LMS should be fully integrated and encompassing full interoperability. Indeed the focus should be on the integration of LMS rather than integrating into the LMS.

9.   Conclusion

Libraries are at a critical stage in their evolution. They have failed to stand up to the challenges of the modern times and net-generation. Libraries watched their services taken over by Google, Amazon and by other consolidated information resource services. One of the major reasons for this failure is perhaps the weak technical backbone of current LMSs. A robust and integrated LMS, interoperable with other library technologies, capable of delivering traditional as well as new functionalities to handle heterogeneous information resources is required.

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