The Integrated Library Management System (ILMS): a core component in the fusion of e-learning and e-knowledge

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Introduction

With an increased focus on return on investment for learning objects, eg non-duplication of effort—as well as the penetration of “knowledge silos” (Blake, 200?) for purposes of sharing and (re)combining content, we need to advance the integration of core support systems.

E-learning is not just about Learning Content Management Systems (LCMS); e-knowledge is not just about corporate systems or portals; and an Integrated Library Management System (ILMS or ILS) is not just about the Library’s online catalogue. Robson (2003) describes e-knowledge as including “the fusion of e-learning and knowledge management to support the pervasive utilisation of knowledge”.

This discussion paper focuses on the need for educational enterprise technology infrastructures and processes to develop the integration between the various “e-services”. It examines in particular the role that the ILMS could play in such an environment. The recent and rapid evolution in the past few years of libraries, ILMS vendors and integrated library systems themselves now presents some interesting challenges—and opportunities.

Students and the Information Commons

Libraries are underpinned by values of stewardship and accessibility—the “stuff of research and learning” as Dempsey (2004) describes it. Libraries function both as a place and as an entity that offers services and provides access to collections. As a place libraries are part of social exchange, learning and the concept of “commons” (Dempsey).

Libraries are important as environments that support learning: not just warehouses of print and electronic information but especially places for students (and others) to collaborate / do group work. In this environment incoming students arrive with increased expectations for technology-based resources. For example, they expect to be able to perform a range of online tasks from the same device. (And students are not the only ones!). They may wish to access a bibliographic database in order to download data into a spreadsheet while e-mailing fellow students or friends as well as checking on a streamed video of a lecture from the previous week or skimming a digitised previous examination paper.
Libraries and the Parent Organisation

Libraries are typically part of larger organisations with suites of products for managing all kinds of data such as finance, human resources, students, learning objects, and documents. This needs to be customised and delivered to the end-user—be that person a student or staff member—as part of what Logan (2002) calls a “flexible ecosystem information network”, ie intelligently move data from one application to another.

In an academic institution such customised environments would reflect the requirements of different sets of users. If we look at e-learning and expand the previous example of a “typical” student, then we might envisage a scenario in which that same student now accesses learning platforms, personal library records and exam results, electronic transactions with the cashier’s office, a federated search tool that sits atop a variety of their favourite metadata repositories and full text sources, and a suite of office applications.

As a member of the Net Generation, our student wants (Terry, 2001)
- All required content to be available
- All content to be interrelated
- All content to be easily accessible

The Role of the ILMS

What about library staff and the back-end of the e-knowledge environment? For library staff, access to local systems for finance, library records and learning platforms such as Blackboard might be served up with remote systems for online ordering, bibliographic utilities and online work tools. A number of ILMS vendors support EDI (Electronic Document Interchange) for communicating with library suppliers: orders, invoices and claims.

Some of this integration is achievable now, but for a variety of reasons has not been widely adopted. Most universities interface aspects of the student information system with their ILMS if only to populate user data, eg borrower records. Most ILMS vendors can supply APIs which enable the interface between their system and the various administrative systems within the institution. However, as reported by Maquignaz and Miller (2004), linkages between the ILMS and a university’s finance system—at least within Australia—would be very rare. And yet the strategic value of such integration cannot be underrated.

A recent external review of a major Australian university library recommends that the Library’s investment in IT infrastructure be integrated with the University enterprise systems where appropriate (Review Committee, 2000). More specifically it states:

The issue of the integration of the Library’s systems with the University enterprise systems was raised. The Review Committee draws attention to the difference between enterprise systems (e.g. PeopleSoft), which manage internal (corporate) information, and library systems, which manage or
provide access to external information. While enterprise systems are not
designed to manage the latter, the interface between the two needs to be taken
into account, for example, when digital library information is built into
courseware.

In 2003 Duke University identified some of the key issues that would influence its
selection of an integrated library system:

. . . Additionally, the ILS must interact with critical Duke enterprise systems
(e.g., business system (R3), student information system (SISS from
PeopleSoft), and authentication and directory systems (LDAP, etc.)) and must
support electronic data interchange with the commercial sector and between
library systems (ILSAG).

The Advisory Group reiterated the importance of access by library system staff to
APIs (application programming interfaces) not only for customising user interfaces
and running specialised reports but also for integrating the ILMS with “other campus
enterprise systems”.

As we look at technology in tertiary education as a whole, we can see the trend away
from “silod” administrative and academic systems towards enterprise-wide e-
learning solutions. Major computing vendors such as Sun Microsystems are
highlighting the consolidation of library, research and enterprise computing as a major
demand driver within the academic sector.

**And the Solution is …?**

Libraries are using the e-learning environment to re-think how users interact with
content. The seamless integration of library digital resources and services into that
environment is an important step in defining the technical infrastructure which will
ensure successful “service convergence” (Endeavor, 2004). Various ILMS vendors
are working with course management system vendors (Blackboard, WebCT) to create
tools / building blocks for incorporating library resources into those systems—and all
achieved through a single sign on.

There is no question that there is currently considerable focus on potential interactions
between information environments—especially library information systems—and
learning environments. In addition ILMS vendors are developing information portal
products for managing hybrid information systems, as exemplified in our “typical”
student’s use of a federated search tool in the scenario outlined above.

But more needs to be done in integrating the ILMS with institutional administrative
systems, especially finance, in order to address business processes and knowledge
management issues. Educational institutions need to develop a more integrated model
in which libraries, IT and administrative departments, and academics work together
strategically. This will help balance the equation so that the integrated library system
is not seen just in terms of e-learning but equally as a key system among the other
enterprise systems.
Integration and Dis-integration

Librarians and IT professionals are working with some ILMS vendors to develop solutions to a range of knowledge management / access issues. This is an area that merits further consideration by educational institutions.

It may be that the traditional emphasis on “integrated” in the acronym “ILMS” will change to a more modular approach: one in which various functional applications (products) within an ILMS are treated as discrete interoperable systems which can then be interfaced to / integrated with individual enterprise systems. In a recent white paper McLean and Lynch (2004) have foreshadowed the same conceptual model.

Conclusion

For the integrated library management system, interoperability means interfaces for different kinds of systems at the institution level. It also means interfaces for similar systems at the inter-organisational level, as a result of which resource sharing and collaboration can now be taken to a whole new level. The ILMS is no longer the poor cousin in the e-learning / e-knowledge landscape.

References


