Section 2 - Summary Report

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2.1 The JISC & SCONUL LMS Study

2.1.1 Scope

The Library Management Systems Study, jointly commissioned by JISC and SCONUL, represents an evaluation and horizon scan of the current library management and related systems landscape for UK Higher Education

Key drivers for the study were the JISC long term objective to develop an online Information Environment that provides secure and convenient access to a comprehensive collection of scholarly and educational material, and SCONUL's aim to help its members to enhance services based on a clear understanding of the Library Management Systems (LMS) market in the context of the user experience.

2.1.2 Approach

The study, which took place from August 2007 to February 2008, was based on a combination of desk research, survey instruments and consultation, namely:

- **a horizon scan** of issues, initiatives and key factors influencing the development of LMS and library services
- **an online survey** of UK HE libraries, which gathered current information about the electronic systems and services provided by 100 libraries
- **interviews** with the main UK HE LMS vendors to better understand their businesses, the factors influencing their strategy and their development plans

To ensure that the study was informed by current thinking in the sector and from the wider library arena and by the perspectives of key agencies, a **Reference Group** was established consisting of 17 senior librarians and stakeholders from the UK and international community, including several SCONUL members.

2.1.3 Report

The JISC & SCONUL Library Management Systems Study report consists of 5 sections, which have been designed to be considered as a whole or to be studied independently by specialist readers. Consequently the reader will find a necessary degree of duplication across some sections.

Following the 'Key Messages' outline (Section 1), this 'Summary Report' (Section 2) synthesises the findings and conclusions of detailed sections, which are derived from the four elements of the study methodology:

Section 3 - Horizon Scan
Section 4 - Library Survey
Section 5 - Vendor Perspectives
Section 6 - Reference Group Feedback

The concluding 'Making Decisions' (Section 7) provides a short guide for librarians to consider the implications of the study on processes and practice in HE libraries and on the wider HE institutional context, with especial reference to forward planning for LMS and related systems.

The LMS study report is supported by two appendices which detail the Survey Statistics & Charts (Appendix 1), derived from the responses of exactly 100 UK HE libraries (specific to Section 4) and summaries of the of dialogues conducted with the four leading systems vendors (Appendix 2).

2.1.4 Thanks

The LMS study team was drawn from three consultancies with wide experience in the context of library management, emerging technologies and sector developments – led by Sero Consulting Ltd, working with Glenaffric Ltd and Ken Chad Consulting Ltd.

However the study would not have been possible with the considerable efforts of

- The 100 UK HE libraries, well over 50% of the sector, who responded to the survey
- SCONUL committee members and colleagues from the JISC team who supported the detailed process, namely Anne Bell, Jane Core, Ian Dolphin and Balviar Notay.
- The 17 members of the Reference Group who exceeded the commitments to which they signed up in August 2007, not least those who attended the Horizon Scan workshop held at the Open University.
- Colleagues from Edina and MIMAS, whose input to the JISC and British library 'Discovery to Delivery' workshop in December provided a timely opportunity to correlate findings.
- Not least, the senior managers of the four vendors who provide LMS and associated systems to almost 90% of the UK HE sector – ExLibris, Innovative Interfaces, SirsiDynix and Talis.

2.2 Context

The report outlines the context for change in libraries in terms of institutional priorities, demographic trends, globalisation of goods, services and communities and technological advances.

Perceptions of the role and function of the university library are changing rapidly. Web 2.0 and its corollary Library 2.0 represent new ways of thinking and working with profound implications for traditional concepts of authority and value. Users, whether undergraduates or researchers, increasingly expect speed and immediacy of information discovery, one-stop access to aggregated services, user-generated open content, and personalised, workflow-related delivery to the desktop. A new market for library services and information provision has emerged, with Google and Amazon representing the de facto metaphors for discovery and delivery.

The horizon scan adopts assumptions about the environment, which are framed in terms of society, technology and people. Whilst issues of demographics, learner diversity, fee structures and even carbon reduction will each ripple through university planning, none are as immediate in terms of impact on library services as the march towards ubiquitous broadband access underpinned by a wide range of mobile devices. In that context the web and its associated technical standards continue to dominate.

2.2.1 Technology

Whilst there is no possibility of identifying the full technology picture even in the medium term, tenable assumptions and attitudes include:

- assume digital access devices and broadband connectivity are pervasive
- think mobile in terms of new procurements and service developments
- watch the domestic and schools markets for new trends
- value learner ideas and attitude
- watch out for and leverage influences from peripheral fields
- balance control with agility by deploying Web Services

The world of media is changing beyond recognition, especially in the relative cases for print and electronic resources, regardless of how they are managed:

- e-Books will become widespread on the foreseeable horizon, and the changing requirements for book stock may offer transformative opportunities, potentially involving consortia
- Libraries and repositories have growing role in managing the scholarly output of their institution, due in part to the rise of the Open Access movement
- User participation in publishing presents challenges relationships between the formal and the informal

Web 2.0 has very particular implications for library services, despite the danger that Web 2.0 and its application in libraries (sometimes called Library 2.0) becomes an ill-defined catchall. The Web 2.0 label tends to be used in two different ways, importantly differentiated in the context of this investigation:

- Concentration – the aggregation of information and associated intelligence driven by major data hubs, both the generalist like Google and the specialist like Amazon
- Diffusion – the dissemination and reuse of content involving such as blogs, syndication (RSS) and mashups

Whilst social networking underlies both, the critical factor on the library horizon is 'ownership' of the means of the concentration and diffusion, potentially driving the use of data for business intelligence and therefore enhancing user services, providing a real 'network effect' where individual institutions do not scale:

- Opportunities at levels higher than the individual institution arising from the aggregation of metadata, user activity data (e.g. clickstreams) and user created data (e.g. tags, reviews); in a Web 2.0 world, the resulting 'Network Effect' is key to maximising value and potentially to reducing the unit cost.
- The 'Long Tail', representing opportunity for specialists – based on the fact that a specialist (e.g. subject based) service has little local mass but is highly likely to have critical mass with sustainable community loyalty in a wider geography

It is observed that Google does not yet provide enough 'context' for students and researchers. However, Higher Education has only begun to realise its value as a 'trusted' domain, underpinned by such data, potentially capable of uniquely and efficiently addressing the user context, with developments such as the Intute repository search potentially setting the compass.

In order to address such requirements, libraries (individually and jointly) should question first their ability to develop, sustain and profit from these types of aggregated services and second the potential fit of extended library systems and LMS-related products to deliver the resulting services.

2.2.2 People

The JISC 'Learner Experience' and 'Google Generation' reports have been significant in developing understanding of the changing needs and expectations of current and arriving learners and of researchers. The key challenges for library services arising from the 'Google Generation' may be summarised as:

- Undergraduate and researcher experience of the wider online world in terms of work flows, tools and collaboration
- The implications of that experience for perceptions of interface, efficiency and ultimately use of time
- The disruptive impact, albeit over a longer time, on scholarly behaviour – ranging from research methods to judgements on authority

The LMS survey gathered responses to 'the perception that there may be a growing problem with the way in which students interact with library resources'. Respondents widely acknowledged that Google and similar metaphors have changed the game in terms of attitudes and workflows:

- ‘Generally, the delivery of library resources is not well attuned to student expectations, learning styles, study environment or lifestyles’
- ‘Many students go to Google first and go no further’
- ‘Students are working in different ways: they are often time limited and off campus and this will affect their behaviour
- ‘Disappointment is exacerbated when the students find a resource only to find that they then do not have full-text access
- ‘People tend not to think in terms of library concepts and flows; they want fast, accessible results which will suffice not a fragmented utility for deep and exhaustive research’.

The observations of Marshall Breeding on ‘Trends in Library Automation: meeting the challenges of a new generation of library users’ respond to this perspective in the library systems context, notably

- OPAC interfaces do not compare favourably with alternatives on the Web
- Consider the library’s Web site as a search destination not a starting point
- Expose library content and services through non-library interfaces
- Add-ons for dealing with electronic content are “must have” products
- Web services is the essential enabling technology

Access is therefore recognised by many HE librarians and service providers as the number one user issue – from discovery to delivery, one-stop, quick, work-flow related, integrated and personalised.

However there is a growing understanding that the passive ‘consumer’ journey from ‘Discovery to Delivery’ is itself being transformed under the influence of Web 2.0 thinking in to an active cycle engaging the user as creator, raising challenges of authority and of new curatorial responsibilities.

2.3 Library Management Systems

Libraries, vendors and Reference Group participants have suggested that the time is right for a fundamental rethink about systems and about the processes that need to be managed. This is based on

- recognition that the world is changing and that libraries need to change too, taking full account of the complex systems ecology within which they operate
- changing perceptions of what a library collection is and does, including collection and circulation, resource discovery, changes in ownership and control, personalisation and seamless access to resources
- a sense of stagnation in service development, other systems having caught and overtaken LMS

2.3.1 The market

The UK HE LMS market is well developed and mature. The study has established that libraries spend approximately £13.1 million annually with the four main vendors who have nearly 90% of the market.

UK HE libraries therefore represent about 5% of the global library systems market across all sectors, estimated to be worth around £285 million in 2006. By comparison Google (defined in its own mission statement as a 'library' company) had revenues of over USD $16 *billion* for 2007.

Private equity investment now plays an important part of the ownership picture with two (ExLibris and SirsiDynix) of the four main vendors now owned by private equity companies. This represents nearly half the UK HE market. The priority of the new owners must be to achieve a good return on their investment before selling or refinancing.

The churn in HE LMS replacement is very slow, as most institutions replaced their end-of-life systems around the turn of the century. Many customers retain long-term loyalty to their LMS vendors despite changes in ownership and confusion over product direction after mergers. Opportunities for dramatic growth are therefore limited, though vendors see opportunity for organic growth. As evidenced in Appendix A, the LMS survey respondents corroborated this picture.

- Whilst libraries typically reported annual spend of over £500,000 on print and electronic library resources, most technology budgets fall mid-range between £50,000 and £250,000 per year, with around half spent on the LMS and associated products.
- On the 5 year horizon, spending is not anticipated to change significantly except with a slight shift to the middle ground with fewer spending less than £50,000 annually on materials, technology or staff.

The survey therefore indicted low prospects for organic growth, such as implementation of add-on modules, even taking into account the development of new products and services to manage, discover and deliver electronic resources.

2.3.2 Key trends influencing vendors

Vendors recognise that their products and services are now, more than ever, part of a much bigger environment, which raises high level challenges; for example

- **Standards –** shifting in emphasis from the domain specific (like Z39.50) to globally recognised standards driven by such as W3C, with the potential to break down product and service boundaries
- **Web Services –** providing robust yet agile mechanisms for developing interfaces both within the LMS product space, opening up opportunities for decoupling vendor modules, and also with the wider world of institutional systems and web applications; significantly, almost 25% of libraries reported some form of Web services development, often linked with IT services.
- **Consortia –** a variety of shared services have been adopted in other geographies ranging from a common LMS to more dramatic changes in physical arrangements. One vendor cited the potential for library management systems delivered through SaaS (Software as a Service – on demand, web-based) to achieve a 40% reduction in overall cost.
- **Open Source –** ranging from a means of adding value around a vendor LMS to the basis for complete and competing LMS solutions; however, current US experience indicates that Open Source does not mean a cheaper LMS, nor a more *interoperable* one. It is therefore not surprising that no survey respondents considered an Open Source LMS a likely possibility, whilst nearly 20% had no interest at all in Open Source.
- **Open Data –** the openness of libraries and services to make their library catalogue metadata freely available would enable re-use (mashup) in new and low cost services, as exemplified by LibraryThing.

In the context of these mutual challenges and opportunities, the vendors would welcome a closer dialogue with JISC and with SCONUL. The vendors themselves have well established processes to ensure they remain engaged with their UK customers and all agree that UK HE is a strategic market. However they observe that neither the JISC itself nor the Information Environment model directly influences their thinking.

2.3.3 Library Perceptions

Most libraries report their LMS to be reliable, efficient and functional. Their main advantage for students and other users, over alternative routes to information, is seen as their ability to find specific items and to report availability. On the other hand around two thirds agreed that the disadvantages to users were that they were 'clunky,' limited to the catalogue and had low visibility to users. From a staff use point of view, 70% of respondents said that lack of corporate integration was the major disadvantage.

Library survey respondents shared many of the vendor views on immediate priorities and trends, especially regarding interoperability and user work flows. When asked to comment on missing functionality, repeated themes were:

- Improved user interface and interaction
- Integration with external systems and the open APIs to do this easily
- Reading Lists fully integrated with the VLE and e-material
- Electronic Resource Management including better reporting
- Inter-Library Loan

There is a perception that in terms of the core LMS there is little now to differentiate systems. Some will review their position as fixed contracts come to term and roughly 20% were looking at a possible replacement between 2008 and 2012. In view of the current level of disruption and uncertainly regarding service models, libraries should carefully consider whether a new procurement is the appropriate response in a market where products are not strongly differentiated.

2.3.4 Product Directions

The trends on the market horizon are clearly influencing the vendor product investment in Electronic Resource Management, extended search and new interfaces.

- **Electronic Resource Management -** The main trend in library systems has been the need to manage and provide access to an increasing range of electronic resources (primarily electronic journals). This has focused attention on enhanced search and delivery mechanisms and new Electronic Resource Management (ERM) systems. With vendors now talking about more integrated 'Universal (or Uniform) Resource Management' of the whole print and electronic spectrum, there is likely to be an evolution from the newer ERM systems to include the management print resources.
- **Vertical Search -** The rationale for vertical search is that, although users are sometimes looking for all the information they can get using the likes of Google and Yahoo, often they are looking for something very specific. In response, vendors have developed 'vertical search' applications, targeted at the specific undergraduate and postgraduate research business channel. Google Scholar can also be considered a vertical search application. Importantly these products are designed irrespective of the underlying LMS.
- **Other Discovery Products –** Metasearch products, providing a consolidated search environment for remote information resources have been less successful for the vendors. It is significant that Google Scholar has the second largest UK HE share, as libraries look beyond the vendors to meet the needs of the extended library function. Open URL Resolvers have relatively high take up, being a key to making best use of scholarly resources acquired or licensed by the library. The usefulness of Google

Scholar has been enhanced by integration with Resolvers, so users can be directed to the 'appropriate copy'.

- **De-coupling systems -** LMS vendors know that new standards for interoperability could enable them to sell their 'add-on' products beyond their own LMS customer base. In a relatively slow moving market, this offers a significant way to grow business, so most new products are designed to work with a variety of LMS. In addition libraries have begun to use web services to interoperate with university portals or admin systems. The greater de-coupling challenge lies however in the disaggregation of core LMS functionality, potentially leading to a smaller LMS system footprint.

2.4 Business models

2.4.1 The Patron Business Requirement

Whilst it is tempting to see the business case for the patron in terms of feel-good factors, libraries should be rigorous in seeking out tangible 'business benefits' from the patron perspective. That rationale needs to be sharper and more explicit an era in which both learners and researchers may ascribe increasing value firstly to what's 'out there' (both content and networked feedback) and secondly to how it's done 'out there' (workflows and interfaces).

Selling points for the patron will include services that

- save time or money (e.g. Print on demand)
- are unavailable elsewhere (especially 'out there' on the network)
- come with the kite mark of authority (e.g. direct linkages to study programmes)
- are supported by value added expertise (e.g. from subject librarians)

2.4.2 The Library Business Case

Libraries need to express their business case unambiguously in terms of corporate rationale in which cost and efficiency are increasingly the drivers.

It is therefore essential that libraries know their unique selling points and let others do the rest. For example:

- identify the essential points of integration with corporate systems, seriously questioning duplicated functions
- embrace the network, recognising that some things are better done by others 'out there', such as Google
- consider the potential of the physical and the online library to become a special space
- take the high ground by applying library expertise to maximising corporate intellectual assets

2.4.3 LMS Positioning

The integration of the LMS with other business systems was the most significant institutional issue identified by many survey respondents. Increasingly, libraries recognise this might involve the disaggregation of LMS services and integration with other corporate systems for learning and teaching, research and administration. A key issue is the extent to which the advantages of LMS functions, such as purchasing or borrower records, justify continued independence from other business systems in the increasingly integrated corporate environment.

The positioning of the Library Management System (covering traditional modules plus relatively recent add-ons such as Electronic Resource Management and Vertical Search) relative to the perceived landscape is therefore central to this study. A number of inferences can be logically drawn, which may have a domino effect:

- The concept of a total solution or a forever expanding one stop integrated system from a single LMS vendor is anathema set against the trajectory of corporate systems and global services
- Google represents 'the gorilla in the room', offering a 'good enough' free library service based on advertising, start with workflow and adding collections
- The LMS should therefore be considered primarily as a back of house application, doing things that have to be done and that no one else does better, interoperating (or cooperating) with other corporate and external applications

Given this backcloth, three possibilities should be considered very seriously:

- It may be unadvisable to engage in the procurement a new LMS in this climate
- It may over time become more practicable and sustainable to have the option of Open Source LMS components
- It may be the right time to review the value of consortia, not just for purchasing purposes but also with a view to the radical re-casting of some services on a shared or out-sourced basis

2.5 Threat or Opportunity?

2.5.1 Achieving critical mass & maximising value

The technologies and business models of the network economy open up new opportunities to respond to these changing conditions.

The Web 2.0 network economy model suggests that the availability of easily re-usable data encourages a virtuous cycle, yielding critical mass for the user and the service provider. This is based on concentration and diffusion, supported by exposure through Web Services / Service Oriented Architecture.

Discovery to Delivery processes are only part of an emerging user 'creativity cycle' [C2C - Create to Curate] whereby users are free to create and expose innovative objects, to contribute to and to repurpose others' objects. If any HE system is to service this workflow in the specialist context of study and research, it would surely involve some elements we might recognise as a 'Library Management System' alongside, perhaps, the characteristics of a PLE and a social network.

The biggest driver to this end is the liberation of data and services, involving the removal of both technical and commercial barriers to the 'network effect'.

- **Expose -** Data and services must be 'liberated', exposed for re-use and wider exploitation by anyone (subject to unavoidable licence constraints)**.** Originators and curators, such as libraries, should not be concerned with the shape and scale of the resulting services – they may be personal, collaborative, institutional, sector wide or domain specific, global.
- **Re-use -** The result will be opportunity for fusion, exploiting canonical data by re-purposing, remixing or mashing it up. Developers of services should be concerned about hitting the network level to suit their purposes, to maximise the network effect or to engage the long tail, recognising that libraries may not be best placed to develop the end services

- **Participate -** There is a clear link between the enfranchisement of individual participation in the library domain and the national policy objective of greater personalisation in learning. All players (students, lecturers, researchers, learning support staff and librarians) must be free to contribute through such as recommendation, links and tags.

2.5.2 Corporate Implications

The corporate implications of such opportunities for HE institutions are not insignificant.

- Human Resources & Professional Change
  - Levels of library staffing, relating to 'traditional' roles
  - Roles of library staff (e.g. relating to learner support, cataloguing)
  - Business process changes (e.g. Acquisitions)
  - New approaches to authority, authorisation and authenticity
  - Increased dependency on cross-service working
- Systems
  - Requirement to expose data and services to get in the game
  - Risks of an 'always Beta' systems culture
  - Integration required to right size the LMS footprint
  - Possible dependency on vendor cooperation
- Wider
  - Challenge of establishing new licensing models with publishers
  - Reputational impact of change and collaboration relating to the library
  - Opportunity to re-purpose significant intellectual assets

2.6 Moving Forward

There is evidence of a growing collective will for concerted and constructive dialogue in the profession about the business processes that a library is expected to manage,

- Adapting relatively inflexible legacy systems to meet increasing user expectations of flexibility and speed of response.
- Envisioning the future footprint of library systems relative to growth of the personal learning environment and other user developed processes
- Addressing internal capacity and professional development needs, including capability in and understanding of the technologies underpinning Web 2.0

2.6.1 Guidance to Libraries

Time for review

It is widely suggested that the time is right for a fundamental rethink of the nature and function of the modern HE library, set against new institutional and user contexts within which the systems and processes need to be managed.

In the ongoing process of re-assessing their business proposition, libraries should in particular identify their unique selling points and consider the extent to which they should concede or cooperate with others to do the rest. This will involve:

- recognising essential points of integration with corporate systems, questioning duplicated functions
- embracing the network, understanding their place in the value chain and recognising that some things are better done by others
- delivering tangible 'business benefits' from the user perspective, to be found in workflows that save time or money and services that are unavailable elsewhere, that come with the kite mark of authority or are that supported by value added expertise.

Reasons for caution

Now is not the time for new LMS procurements, though there may be opportunity for re-structuring deals with incumbent suppliers. Nor is it the time to cut over to completely new models as Open Source developments are still tied to established processes.

Whilst recognising that change and disruption will continue, there is expectation of greater clarity over the next five years in terms of

- Impact of Google Scholar and potential alternatives
- The value of services addressing HE specific needs, such as Intute repository search
- The role and value of a range of Web 2.0 related developments
- e-Books business models
- The coverage of Open Source offerings
- Vendor and publisher responses to new paradigms

Recommendations for action

Libraries therefore need to invest with caution but not complacency. Whilst is clear that the library 'function' has continuing and potentially growing value, it is not clear what role 'conventional' library services will play. Therefore, it has been the intention here to position a set of short-term investment recommendations relating to Library Management Systems. These recommendations are geared to build and benefit from that 'exploratory experience' amidst disruptive trends.

Libraries will not be in a position to act on all these recommendations in parallel, but should rather consider this as a menu to assist in the necessary action planning process.

- 'Sweat the assets' to get more value from your LMS investment
- Look at ways to improve services by implementing features around the core LMS
- Address the barriers to resources through single sign on, unifying searching and access
- Liberate library metadata for re-use, exposing resources via a variety of routes, including search engines, portals, VLEs and PLEs
- Work internally to develop interoperability, possibly de-coupling LMS components
- Explore partnership to increase critical mass and network effect whilst reducing costs

2.6.2 Role for JISC & SCONUL

In the present climate of change, there is a joint role for JISC and SCONUL in promoting communication and networking between and among institutions:

- Facilitating a business process review for libraries to scope the nature of the systems that are to be managed, articulating user needs, workflows and information behaviour; notably but not exclusively in the context of
    - Sector wide user experience considerations
    - Web 2.0 / Library 2.0 developments
    - International e-Framework models

    - Investigation and brokerage of consortium and shared service models
- Forecasting and horizon scanning with reference to such as Open Source
- Identifying future skills specifications for library staff, including the possibilities of Librarian 2.0
- Dissemination and awareness raising to close the gap between innovative projects and operational developments and practice in institutions

In this context the natural role of JISC would be expected to include

- Initiating projects to develop models of practice and exemplars of services, generating accessible reports and case studies
- Facilitating the development of open technical specifications (not necessarily standards), shared services and enterprise architecture
- Investigating the national value of 'the long tail' and user feedback from reviews to clickstreams
- Developing links across the HE systems community

In order to better engage with libraries and vendors, JISC potentially has a key role in helping to define the domain application of web services. Such initiatives might open up the market, and leverage the skills of a new breed of 'mashers up', both reducing costs and opening doors for libraries.