

The Implementation of MetaLib and SFX at Loughborough University Library

A Case Study

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Executive Summary

This report is a case study of the implementation of MetaLib at the University Library at Loughborough. It was commissioned by JISC to inform the HE and FE community with a view to encouraging and enabling the further development of library-oriented portals.

MetaLib is a commercially produced portal which provides a central access point to databases with the functionality to cross-search those databases. SFX complements MetaLib by linking directly to the full-text of e-journals to which the Library subscribes.

A library portal was seen by Loughborough University Library as a way in which access to the Library's resources could be improved and extended. Although libraries in FE and HE offer an increasing number of resources electronically, there is some evidence to suggest that these resources are not being sufficiently utilised by those who would benefit. It was of some concern to the Academic Librarians¹ at Loughborough that the subscription electronic resources were not being fully used and their belief, based on anecdotal evidence, was that students preferred to use Google and similar search methods rather than accessing the library web pages for their research. The wider promotion of resources, as well as the creation of an interface which presents resources attractively and is easy to use in a similar way to Google were two reasons why Loughborough chose to implement a library portal. A portal provides an easily accessible facility which enables staff and students to search good quality sources more effectively.

MetaLib was chosen because it fulfilled the criteria the Library required: simultaneous searching of databases, de-duplicating, ability to mark and save, or to receive results by email. It also provided linking technologies and was the most cost-effective.

The implementation of MetaLib required input from Academic Librarians, the Systems Team and Support Services. A summary of staff time involved is given in the report. The Academic Librarians at Loughborough have been required to catalogue and configure all the databases and this continues to be an on-going task. During the course of the project it has become apparent that other skills are required. These include marketing, the ability to train library staff and to communicate the new system effectively to academic staff and students. The availability of in-house technical expertise to deal with any problems was also felt to be an important factor.

The training of library staff, the thorough testing of the newly installed system and the piloting of the portal are all essential stages in the implementation process. MetaLib was demonstrated to all library staff and training given to those who are involved in Enquiry Services. Databases were tested thoroughly to ensure the searching procedure was correct and access to MetaLib was tested both on and off campus. The piloting of the portal to three Departments at the University was a useful exercise, not only to trial the product, but also to gain valuable feedback from academic staff and research students. The feedback provided library staff with positive comments about the new service and suggestions for improvements to the interface and the display of search results.

Although MetaLib allows a degree of customisation, the decision was taken to limit this as each upgrade of the system requires local re-customisation. It was agreed that access would require authentication as this allows users to create their own list of 'favourite' databases. Access is through the use of the email user name and password.

¹ Academic Librarians at Loughborough are librarians who have responsibility for liaison with academic departments at the University.

The report gives some information on usage statistics since the implementation of MetaLib. Many databases saw a dramatic increase in usage, including those which are not cross-searchable, illustrating that MetaLib is a useful tool, not only in improving access to resources, but also in encouraging use by grouping the resources together. The statistics also show a large increase in the number of searches carried out in MetaLib.

It is recognised that further evaluation of the impact of MetaLib will be necessary, in particular on the way in which students search for information. Enquiry Services staff have found that the concepts of searching are easier to explain with MetaLib.

The report includes recommendations for potential library portal developers:

- Form a working party to implement the portal. Include someone in-house who has technical expertise. Consult all appropriate staff including Systems staff
- Recognise that certain skills, such as cataloguing, marketing etc may be necessary
- Decide what the library wants from the product. Contact suppliers for information and cost
- Decide who would benefit most from the supplier's training session and consider cascade training if more appropriate
- Make full use of any supplier's training session. Prepare questions beforehand. Also find out in advance what can be achieved in the training session
- Test thoroughly on and off campus
- Pilot the portal and use feedback to make suggestions to supplier
- Limit local customisation to ease any upgrading of the system
- Use the system as a means of promoting all the databases, not just those which are cross-searchable
- Ensure statistics are available to evaluate usage
- Market the portal
- Build in time for on-going maintenance, cataloguing and training

The report concludes that the time involved in implementation is an investment as the benefits in adopting a library portal are demonstrated in the increase of usage of databases and in the enhancement of learning and research for the users of library resources.

Background

The Joint Information and Systems Committee (JISC) have commissioned the Library and Information Statistics Unit (LISU) to conduct a case study of the implementation of the library-oriented portal known as MetaLib at the University Library at Loughborough. This case study complements another joint JISC/LISU project which is conducting a national survey of all Higher Education (HE) and Further Education (FE) establishments to determine the level of development of library portals. The findings of this survey will inform JISC and the community on the current situation in the use of library portals.

An increasing number of libraries in HE and FE are investigating the implementation of a portal and this case study is an opportunity for interested library and information professionals to learn of the experience of the team at Loughborough University.

This report describes the implementation of MetaLib and SFX at Loughborough in the period from March 2002 to September 2002 and the on-going development and evaluation of this library portal. version 1.3 of MetaLib was implemented in March 2002 and it was this version which was piloted in June 2002 and which went 'live' in September 2002. The report also refers to version 2.12 of MetaLib which has added functionality and includes many of the enhancements requested by Loughborough of version 1.3. Version 2.12 of MetaLib (referred to in this report) was implemented by Loughborough in April 2003 and subsequently upgraded to version 2.13 in July 2003 and 2.14 in November 2003.

As required by the JISC's remit for this case study, the report will include:

- The basis and reasons for implementing a library portal solution
- The specific aims for the portal
- Details of the assessment of possible solutions carried out, including the criteria used, results and the pros and cons of any specific methodology employed
- Any factors that influenced the choice of portal
- Details of the implementation of the portal, including timescales, technical requirements, impact on library service, marketing, alterations in library staff skill sets, training sessions and materials (both for librarians and users)
- Evaluation of the portal, including any user feedback received
- An analysis of the changes that the portal brought about and the benefits and/or problems accrued
- Plans for the future of the portal
- A wish-list of functionality that the portal does not yet offer

What are MetaLib and SFX?

MetaLib and SFX are two separate products that complement each other by managing access to databases and journals. MetaLib² is a tool that enables a library to provide a central access point (portal / gateway) to web databases, with simultaneous multiple database searching functionality for those databases that allow Z39.50 searching. Cox and Yeates³ provide a summary of the different types of commercial portals available. The Library can provide therefore, subject lists of the 170 databases to which it subscribes and readers can often search more than one database at a time.

SFX⁴ complements MetaLib by linking directly to the full text of e-journals or to the catalogue record of print journals to which the Library subscribes, either from MetaLib or other databases that utilise OpenURL functionality. First the Library requests that OpenURL-aware publishers activate SFX on their databases. When activated, a text link or SFX icon appears next to each bibliographic record on the database. Readers can click on this link and data from the bibliographic record is sent to the SFX server to check whether the Library subscribes to that item. If the Library does have a subscription to the item then a SFX menu will provide hotlinks to the full text and/or library catalogue record.

The implementation of a library portal

Reasons for implementing a portal

Although libraries in FE and HE offer an increasing number of resources electronically, there is some evidence to suggest that these resources are not being sufficiently utilised by those who would benefit. A study carried out by the JISC-funded EDNER (Formative Evaluation of the Distributed National Electronic Resource) Project, *How students search: information seeking and electronic resource use*⁵, found that 45% of students used Google as their starting point to find information, 9% used Yahoo and 6% used Lycos. Only 10% of the sample used the University OPAC as their first choice to locate information. The reasons for using Google were given as 'ease of use' and 'reliability'.

It was of some concern to the Academic Librarians at Loughborough that the subscription electronic resources were not being fully used and their belief, based on anecdotal evidence, was that students preferred to use Google and similar search methods rather than accessing the library web pages for their research. One of the reasons for Loughborough investigating the concept of a library portal was this need to promote the use of their resources more widely, as well as creating an interface which presents resources attractively and is easy to use in a similar way to Google. A portal provides an easily accessible facility which enables staff and students to search good quality sources more effectively.

² <http://www.aleph.co.il/metalib/index.html> (accessed 15/10/03)

³ Cox, A and Yeates, R. *Library-Oriented Portals Solutions*, Technology and Standards Watch Reports 02-03, JISC, London, 2002.

⁴ <http://www.sfxit.com/> (accessed 15/10/03)

⁵ EDNER (Formative Evaluation of the Distributed National Electronic Resource) Project, *How students search: information seeking and electronic resource use* (Issues paper 8), 2002. <http://www.cerlim.ac.uk/edner/ip/ip08.rtf>

Factors that influenced the choice of portal

In choosing a library portal the library at Loughborough was looking to include: simultaneous searching of compliant databases, de-duplicating, ability to mark and save, or to receive results by email. It also required the product to have linking technologies so that users can link to full-text if that is available. It was intended that a library portal would enhance the learning experience of staff and students by facilitating their access to a wider range of resources. The Library was also keen to increase the usage of the electronic journals and databases to which it subscribes.

The library went out to tender for a library management system and looked at systems from several suppliers including Ex Libris. Several suppliers were marketing library portals and the Library looked at these at the same time as the new system. Ex Libris's Aleph⁶ was chosen because of the combination of functionality it provided across all modules. Ex Libris were also a new company and were willing to listen to suggestions and recommendations. The product, together with the purchase of MetaLib and SFX, was also seen as being the most cost-effective. For reasons of commercial confidentiality the actual cost to the Library is not available.

Implementation of MetaLib

Unlike the University of East Anglia⁷, the Pilkington Library at Loughborough took a large team approach to the implementation of MetaLib. The MetaLib group was made up of representatives from the Systems Team, Support Services Team (who arrange purchase of the databases) and all nine Academic Librarians. The Academic Librarians are the main liaison point with the academic departments; they also staff the enquiry desks and deliver information literacy training. It was therefore felt that they should play a pivotal role in the development of MetaLib, as this would mean they had a sense of ownership. The negative side to this was deciding the way forward by committee, which on occasion was slow. The first meeting of the MetaLib group took place on 8 March 2002. *Appendix 1* shows the timescale for implementation.

Technical requirements

Loughborough University Library assessed MetaLib in December 2000 and purchased version 1.3 in January 2001. As the purchase was made at the same time as the new library management system, it was decided to get this fully operational before implementing the library portal. MetaLib and SFX were finally installed on the library server in March 2002. The specification of the server was Sun E450 with 4x 480Ghz processors, 4 Gb memory and 8*36Gb discs. By March 2002, Ex Libris were recommending a separate server to run MetaLib and SFX but Loughborough installed MetaLib and SFX on the same server as Aleph as this had been approved at the tender stage. The performance of the server was monitored electronically to ensure delivery went smoothly but there have been periods when the server has been overloaded. Loughborough now have funding in the financial year 2003-04 to install on separate servers and would recommend this to prospective purchasers.

During the implementation of MetaLib, Loughborough found that in-house technical expertise was required to deal with problems as they occurred. This included knowledge of Unix and HTML, also familiarity with Ex Libris working practices and Aleph system tools.

⁶ <http://aleph.co.il/> (accessed 15/10/03)

⁷ Lewis, N. (2002), *Talking about a revolution? First impressions of Ex Libris's Metalib*, Ariadne, no.32

Training of the MetaLib Group

A training schedule for both MetaLib and SFX was drawn up by Ex Libris. All Academic Librarians were required to attend, plus representatives from the Systems Team and Support Services at the University. Where this was not possible, training was cascaded to those who could not attend.

All members of the group were encouraged to think of questions before the training session and these were circulated prior to the session. The questions to Ex Libris were both product-specific and general. The general questions included the following:

- What is the level of local customisation within the portal?
- Have the suppliers considered the Disability Discrimination Act (DDA) during the design of the portal?
- How many databases are cross-searchable?

The training provided an overview of how MetaLib works from both a user and staff perspective. It illustrated how MetaLib could be customised and how resources could be configured to be cross-searchable within the portal.

During the training sessions, members of the group also considered the following factors which would apply to any library considering implementation:

- Who will benefit most from MetaLib – undergraduates, postgraduates or researchers?
- What impact will MetaLib have on how we train students to access information?
- How will MetaLib change the structure of the Library's web pages and in particular the A-Z list of databases and the subject guides?

It is recommended that institutions thinking of implementing a library portal should consider the above questions for the product they have chosen.

After the training at Loughborough it was felt that MetaLib would meet the needs of all the library users, and in particular undergraduates. Most Academic Librarians thought that postgraduates should be using the native interface of databases to search. It was decided that the subject guides would no longer be necessary, but that the A-Z list of databases should be retained as back-up for the moment.

Ex Libris provided three and a half days training, which although of a high standard, concentrated on the functions of MetaLib. It was then up to those who attended to interpret this to suit the local context. In retrospect, the staff attending the training sessions should have been a few key staff who could have assimilated the information given to them and then cascaded this down to other staff, putting it into the context of the requirements of the University Library.

The training also covered cataloguing and activating existing records, configuration including Z39.50 client and authentication and the interface and how it could be customised. The training offered an opportunity to activate and configure databases; 35 per cent of the databases were

activated and 30 per cent configured for cross-searching (all OCLC databases to which the Library subscribed and most of CSA databases). Prospective clients should be aware that this training provides a useful opportunity to catalogue and configure databases: in retrospect more could have been gained from the session to seek clarification of the configuration process.

Demonstration of MetaLib to library staff

Training material for these sessions was prepared by one of the Academic Librarians and delivered in two sessions to 38 library staff. Feedback from the sessions was positive, with staff seeing MetaLib as a useful searching tool. They also made some suggestions which included, 'link to Library OPAC could be more prominent' and 'could the number of hits be a 'hotlink' on the Results Summary screen?'

Testing of MetaLib

The team of Academic Librarians tested the list of databases: this worked out at approximately 17 databases each. On average each librarian experienced problems with between two and five databases; these were recorded on an in-house template which detailed the following information: database, host, search strategy, error message, name of tester, date and any other comments. This information was then entered into a 'MetaLib testing' database created for this purpose and updated regularly. A small team then looked at the configurations in more detail and made amendments as necessary to ensure they searched correctly.

The accessibility of MetaLib 'off-campus' was tested by the Academic Librarians over a period of four weeks. This was carried out in the library by setting up a separate Internet Service Provider (ISP) and testing via a laptop in the library. 'Off-campus' access was found to work satisfactorily. It has been discovered since going 'live', however, that some students who access library resources from their workplace experience difficulty accessing MetaLib due to the firewall their companies have in place.

During the implementation of MetaLib, concerns were raised about the intermittent slowness of MetaLib. There was a possibility that this was occurring because the OPAC, SFX and MetaLib were all running on the same server. Ex Libris were contacted but this problem was never really solved until the implementation of MetaLib 2.12. Times were also arranged when the system could be checked with the whole Library, to test the speed of MetaLib before the beginning of the semester when MetaLib would be marketed widely to all students.

Piloting MetaLib

To ensure that the pilot was ready for June 2002, the group agreed that only three academic departments, one from each faculty – the Business School, Civil Engineering and Human Sciences, should be asked to participate in the pilot. The three departments were chosen as they were active library users and there were several web databases, that were cross-searchable, available to support their information needs. The Faculty Teams decided which databases were to be included in the pilot.

Each pilot exercise consisted of a brief talk to members of the three departments, followed by a demonstration of MetaLib, a hands-on session with MetaLib and a discussion. A questionnaire, devised by members of the MetaLib working group, was distributed to all users involved in the pilot. A total of 24 attended the sessions and 19 questionnaires were completed. Of those who completed the questionnaire, 68% were staff and 32% were postgraduates. An e-mail was also sent to all members of academic staff who were not present at the briefings; this was to alert them

to the MetaLib trial and to ask them to fill in the web based questionnaire. Responses to this web based questionnaire were minimal and the returns are included in the above figures.

Feedback from the three departments involved in the pilot was very positive with everyone liking the new service. Some useful suggestions were made which enabled the group to draw up a list of 'snags', which could be actioned. These included amendments to the 'Welcome' screen to read "search up to eight resources", and changing font sizes and types to create a uniform style. One of the main concerns which resulted from the feedback was the retention of the A-Z subject list and in which format, to be available either within MetaLib, or separately without the need to log-in. It was decided that this list be retained initially, at least for the first 12 months, with a link from within MetaLib, and from the Library web pages.

- 99% said MetaLib was easy to navigate around
- 80% said they had discovered new resources that they had not seen before, despite no new databases recently being purchased by the library and the fact that 95% of them used databases at least once a month or more
- 100% liked the look and feel of MetaLib
- 50% had never used the subject guides provided in print and electronic format by the library
- 70% thought MetaLib was an easier method of discovering what databases were available, rather than the existing Library database pages

The feedback also resulted in a list of enhancements for the system and issues which could be covered in the training sessions. Negative feedback included a comment that not all databases were cross-searchable, something which Loughborough is taking up with the relevant suppliers. A further comment was made about the brief search results list which does not show the title of the journal. Academic staff commented that they use the journal title as a selection method. In version 2.12 the full citation appears in the brief results screen.

Customisation

The group looked at other library web sites of known customers of MetaLib. This was done to ascertain the accessibility of MetaLib and to gain views on feel, layout and content. A visit was planned to the University of East Anglia (UEA), the only other UK site using MetaLib at the time, but did not take place due to timetabling difficulties. This was unfortunate as their experience would have been very beneficial. Prospective clients would be advised to arrange a site visit prior to purchasing a system, and before any training provided by the supplier.

Following some discussion about changing the name, 'MetaLib' was retained, mainly for ease of recognition by staff and students transferring from other institutions and also because a better name was not forthcoming. The Library logo was included on the interface, to ensure that users are aware that the service is provided by the Library.

It was agreed that all databases should be included on MetaLib, no matter what format, that is web based, networked CD-ROMs available on the campus network and stand alone CD-ROMs only available in the Library. This was because there were strong concerns that if they were not included, they would be forgotten by the students. It was also agreed that pertinent print abstracts would also be placed on MetaLib, for example, *Chemical abstracts*.

Direct links were created from the MetaLib homepage, to web pages such as the Library Catalogue, reading lists, e-journals and searching the web.

As a result of the implementation of MetaLib it was decided that some web pages were now superfluous as the information they held was now on the MetaLib pages. It was therefore decided to discontinue the Subject Guides. As a result of feedback from University staff it was decided to maintain the A-Z list of databases for a year and then review this. After the year it has been agreed to maintain it for yet another 12 months.

Concerns were also raised about the prominence given to cross-searchable databases on the search page to the detriment of databases considered valuable to users, but which were placed at the end of the list. Ex Libris were contacted to find out how the order of appearance of databases could be changed. Unfortunately this was not possible. In version 2.12 of MetaLib the databases appear in alphabetical order, but users can select so that they can just view the cross-searchable databases.

MetaLib allows a degree of customisation and there was some discussion in the group about terminology, colour of pages and content. Minor changes were made to the terminology, for example *e-shelf* was changed to *basket*, but overall the product has been left as provided. It was generally agreed that as little as possible should be changed because every time the system is upgraded, all the customisation would have to be re-done locally.

Authentication

It was agreed that access would require authentication as this allows users to create their own list of 'favourite' databases and gives them access to their own *basket*. Although the combined use of a library PIN and student/staff ID would identify MetaLib as a library service, this would have increased pressure at enquiry desks with people requesting their PIN. It was therefore decided to utilise e-mail usernames and passwords using the IMAP⁸ server.

Authentication during cross-searching of databases that requires a username and password has not caused any difficulty because either suppliers provide an alternative password that is coded into MetaLib so that users do not see it or the Library utilises a generic Athens username and password supplied by Computing Services (this is not a single sign-on).

Information gateways

MetaLib allows databases to be grouped together in sections known as information gateways. It was agreed that the information gateways would reflect the subject guides already in existence on the Library web site.

A member of the team took responsibility for creating information gateways. It was agreed that the categories in the information gateways should reflect the Departments of the University plus other categories such as statistical information, Government information and the Library Catalogue. Main headings and sub-headings were created for the information gateways, dividing them into General Resources and Faculties.

MetaLib version 1.3 had a limit of ten information gateway categories that a particular resource could be assigned to. This caused problems at Loughborough because we had over twenty

⁸ Internet Message Access Protocol: a method of accessing e-mail

information gateway categories (one for each academic department plus a few for general resources) and in many cases needed to assign a resource to more than ten of them.

The solution was to create dummy categories to which Library staff could assign resources and then link one or more categories to each of the information gateways visible to the users. For example we created a category that was assigned to all the engineering information gateways, which meant Library staff could assign a resource to this one category rather than to each of the five engineering departments. We created categories based on departments and subjects (e.g. company information, psychology), and using these new dummy categories we were able to assign a resource to as many information gateway categories as we needed.

In version 2.12, this is no longer a problem as databases can be added to 15 information gateways (which meets the Library's needs) and each gateway can have up to 100 databases attached to it.

Subject terms and keywords

Keywords were added to the catalogue record for each database so that users could search for relevant resources that they wish to access. It was agreed that the controlled subject terms should be the same as the information subject categories and that these could be expanded at a later date using the Library of Congress subject headings. Since then the MetaLib group have spent time adding additional keywords describing each database.

Cataloguing and configuration of MetaLib

MetaLib behaves as a portal to resources and provides one searching interface for databases that are Z39.50 compliant and therefore 'cross-searchable'. To work, all resources have to be catalogued on MetaLib. This is an easy task as Ex Libris provide forms for this process (see Fig 1). They also have a KnowledgeBase of many of the major resources and therefore these items do not have to be catalogued from scratch, they just need to be activated and tidied up.

Fig 1 Cataloguing record

The screenshot shows a web browser window titled 'Metalib management - Microsoft Internet Explorer provided by Loughborough University'. The address bar shows 'http://metalib.lboro.ac.uk:81/M'. The page has a green header with the MetaLib logo, 'Resource Update', and a 'Help' button. Below the header, there is a section for 'Mandatory fields' and a tabbed interface with 'Basic Information' selected. The form contains the following fields:

Resource ID:	EXL01952
Full Name *	Aerospace + High Technology Database (CSA)
Alternative Name	
Alternative Name	
Short Name *	Aerospace + High Tech (CSA)
Type *	Database
URL	http://www.csa1.co.uk/
Link to help in constructing the URL	http://www.csa.com/csa/factsheets/aerospace.shtml
Configuration Code	CSA_AEROSPACE
Authorization Group	Restricted resources
Status	<input checked="" type="radio"/> Active <input type="radio"/> Testing <input type="radio"/> Inactive
Cataloger's Note	

At the bottom of the form, there are buttons for 'NEXT TAB', 'SUBMIT', 'RESOURCE LIST', 'MAIN MENU', and 'DELETE'. The browser status bar at the bottom indicates 'Unknown Zone (Mixed)'.

For databases to be ‘cross-searchable’ they have to be configured. Again Ex Libris have already configured some of the major databases and for those that have not been, they provide standard forms (see Fig 2). The task of configuration was difficult at first at Loughborough as no one team felt that it was their responsibility. As it is part of the cataloguing process and requires basic knowledge of MARC, it was eventually agreed it would be appropriate for the Academic Librarians to undertake this task. Not many of the remaining databases were Z39.50 compatible so the Academic Librarians have had little opportunity to practise configuration of databases. All the database suppliers were contacted, outlining what MetaLib was, what the technical requirements were, and where they could find out additional information about MetaLib from the Ex Libris web pages. Some suppliers immediately responded with the correct data about their product’s compliancy with MetaLib. Other suppliers did not understand what was being asked and several communications followed trying to ascertain compliance.

Fig 2 Configuration record

General	Term Transformations	Conversion	OpenURL	Applications
Configuration Code = CSA_AEROSPACE		Open/Update date 05/03/02 05/03/02		
RESOURCE-FULLNAME		Aerospace + High Technology Database (CSA)		
RESOURCE-SHORTNAME		Aerospace + High Tech (CSA)		
ACCESS-METHOD		Z39		
HOST-NAME				
DATABASE		CSA_AEROSPACE		
IN-RECORD-TYPE		SUTRS		
IN-RECORD-CREATE		vir_z00_z39_sutrs_b		
IN-RECORD-CREATE-PARAM		fab_sutrs_generic_csa		
IN-RECORD-CHAR-CONV		ANSEL_TO_UTF		
IN-DIRECT-KEY				
IN-DIRECT-KEY-PARAM				
IN-SCAN-FIX				
IN-SCAN-CHAR-CONV				
OUT-FIND-CHAR-CONV		UTF_TO_ANSEL		
OUT-SCAN-CHAR-CONV				
SORT		N		
UPDATE-FLAG				

In the three months following the training from Ex Libris the Academic Librarians configured the remaining databases and catalogued from scratch approximately 50% of the Library’s databases. This process could have been achieved more quickly, but the Academic Librarians undertook the task on top of other duties. The setting up of the databases to utilise SFX proved to be more time-consuming than first anticipated.

Once all the resources were catalogued and configured on MetaLib, a month was spent testing the resources and quality checking the cataloguing records to ensure that direct links worked correctly and cross-searching worked as anticipated. This was a necessary process but even then some of the searching quirks were only discovered once the service was ‘live’ and being used by a large group of people. For example, INSPEC was returning the journal details in the imprint field not the source field and therefore the SFX service would not work correctly and *Art*

abstracts still does not always search as anticipated. The lesson learned from this experience was that there can never be too much testing of a new system.

Subsequent on-going cataloguing and configuration of databases was carried out by a smaller team drawn from the larger MetaLib group, to ensure consistency in cataloguing.

Implementation of SFX

The SFX group was a small team of five, including representatives from the Systems, Support Service and Faculty Teams. Training was received in April 2002 and work began immediately on bringing the service online. SFX was relatively easy to set up, but it was a time consuming process as both the journals and databases had to be made “SFX compliant”.

SFX has a KnowledgeBase of targets (items to which the Library wishes to link, for example, Library holdings of print journals or full text e-journals). In some instances it was just a case of activating the journal or supplier on the KnowledgeBase. In others, it was more complicated, as details of the e-journals (title, publisher, ISSN, holdings and authentication procedures) had to be uploaded on to the KnowledgeBase using Excel spreadsheets. This is a standard method of loading data that does not automatically appear in the KnowledgeBase. Although all this information was available at Loughborough, it was not stored together in one place, therefore it was a slow and time consuming process transferring the data manually to the Excel spreadsheets. Uploading the data once it was collated was a very quick and easy procedure. Ex Libris provide monthly updates to the KnowledgeBase and the supplier is happy to receive recommendations for content.

The setting up of the databases to utilise SFX was more complex than first anticipated. Ex Libris provided documentation on how to set up major suppliers, for example, Cambridge Scientific Abstracts (CSA) and Web of Science, but they did not always work in the prescribed way. Where there was no documentation or problems were experienced, the suppliers were helpful in providing assistance on how to provide the SFX links from their databases to external resources. The library would like SFX to be available from all the databases that are purchased, therefore letters were sent to all suppliers asking if they were SFX compliant. It was surprising how few knew about the new technology and required additional data. Quite a few said they were not OpenURL compliant but it would be something they said they would investigate.

SFX went live in July 2002 and nearly all of the Library’s journals are now uploaded and activated on to the KnowledgeBase, therefore accessible via SFX. Of the Library’s database suppliers, only five have been SFX enabled; all databases available from CSA, Online Computer Library Center (OCLC), Web of Science, Emerald Abstracts, SWETS and MetaLib. This makes up approximately 35% of the databases to which the Library subscribes. Unfortunately SFX does not work well when trying to link to books or conference papers and will often indicate that items are not in stock in the Library when they are actually are. This is linked to the type of data that is being sent by the databases to the SFX server. Library staff were initially anxious that readers would be frustrated when the SFX button did not always link to the full text of an e-journal or the Library catalogue for the print subscription. However, reactions from the readers have been positive, with most pleased to be able to discover the availability of a reference in the Library, from within the database they are searching.

Going live

The date of 2 September 2002 was set as the date for MetaLib to go 'live'. This was to give the academic staff time to familiarise themselves with the facility before the start of the academic year.

When the system actually went 'live' there was an initial unexpected problem with the suppliers' Z39.50 servers which crashed at regular intervals. Suppliers responded to the volume of emails from Loughborough staff and the problem was soon resolved.

Marketing MetaLib

A variety of advertising techniques were used in the marketing of MetaLib. These included:

- messages to the staff and student e-mail notice boards; one to announce the availability in the near future, one to announce the 'live' date, and one at the start of term. The wording of the messages was tailored to suit both staff and students, providing them with an option to give feedback on the new service to library staff
- *Library news and announcements*; a news sheet produced by the Library
- posters and printed flyers
- pens
- an article in the University news publication
- a display in the foyer of the Library
- a news-flash on the University's home page
- an official launch during the first academic semester, including a brief demonstration

Training

Initial training for library staff was followed up by refresher sessions as MetaLib went 'live'. These were delivered by members of the MetaLib group and included part-time, evening and weekend staff.

Training sessions were also offered to members of the University, with the earlier sessions aimed at academic staff. Academic Librarians also offered training sessions direct to those Departments for which they had responsibility and these were extremely popular once MetaLib had been launched.

In response to requests from Library staff and users, a basic printed guide to MetaLib was produced. It comprised a single A4 sheet which could easily be updated. It included information on how to log-on and carry out a basic search. A copy of the guide is available at:

<http://www.lboro.ac.uk/library/dbase/metalib.html> During the summer of 2003 an inter-active online tutorial was created (as part of the JISC INFORMS project⁹) and is available at <http://inhale.hud.ac.uk/perl/jump.pl?13-56>

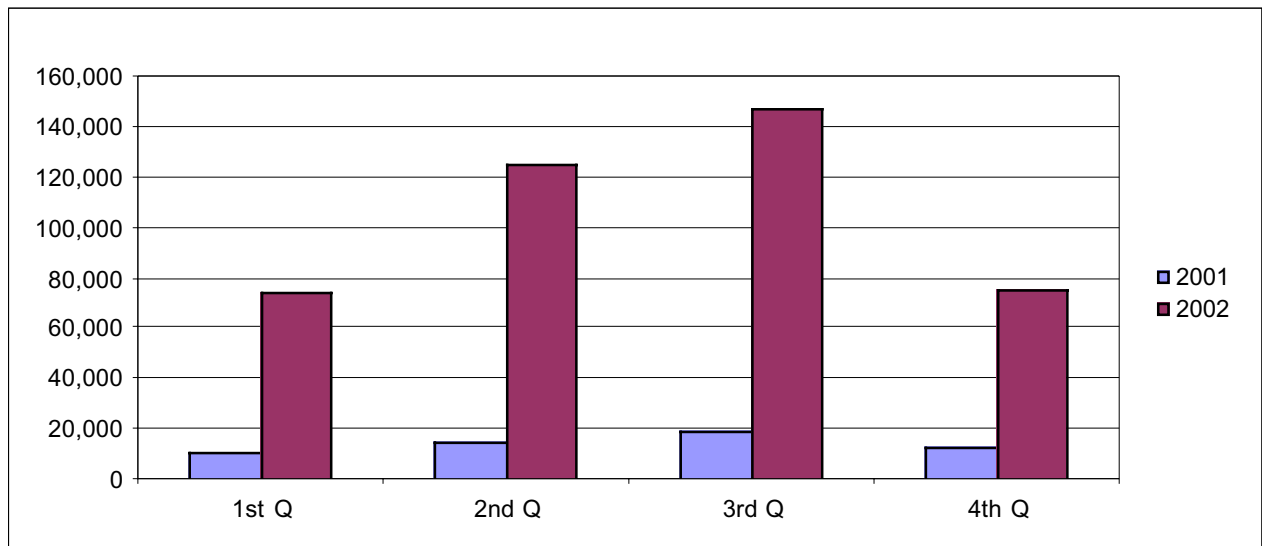
⁹ <http://inhale.hud.ac.uk> (accessed 24/10/03)

Usage statistics

Version 1.3 of MetaLib provided no usage statistics of either logins to MetaLib or searches of databases within MetaLib. However, Loughborough University Library has always been efficient in collecting statistics from publishers and therefore comparisons can be made on database usage. It is not always easy to compare statistics from year to year as suppliers often collate statistics in different formats, for example, logins or searches. Logins are when users log on to MetaLib and searches are when a database is searched within MetaLib. Despite this, the statistics show that with the introduction of MetaLib, the usage of databases, in particular those on the web, has increased dramatically. The statistics shown in the following diagrams are based on figures collected in the academic years 2001–02 and 2002–03. The first quarter runs from August–October, the second from November–January the third from February–April and the fourth from May–July.

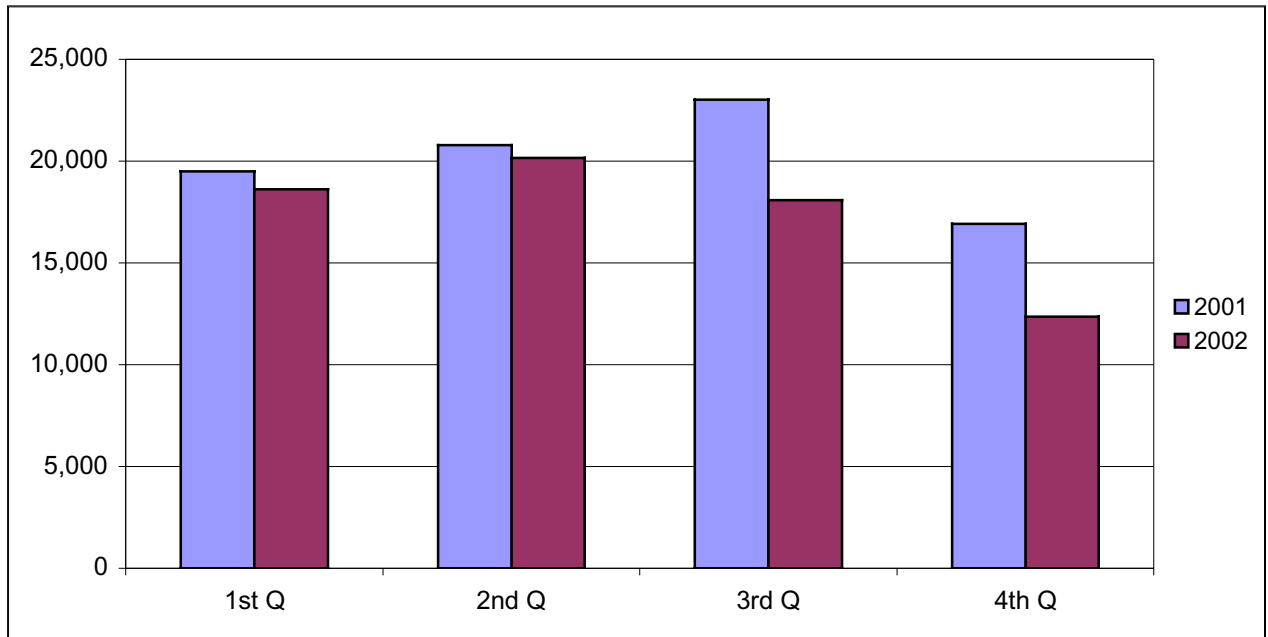
Searches undertaken on databases show a dramatic increase of usage of databases by 609% (Fig 3).

Fig 3 Databases by number of searches



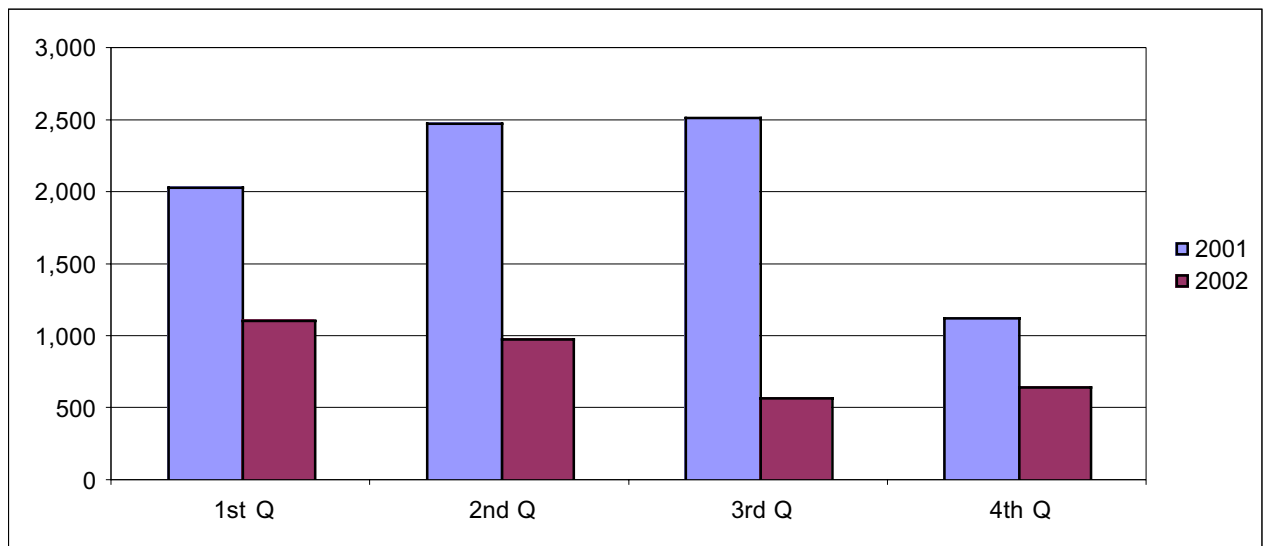
Strangely, however, the databases which collate logins to determine usage, show a decrease in usage of 13% (Fig 4). This could mean that library users are using the search facility more because of ease of use on MetaLib.

Fig 4 Databases by sessions



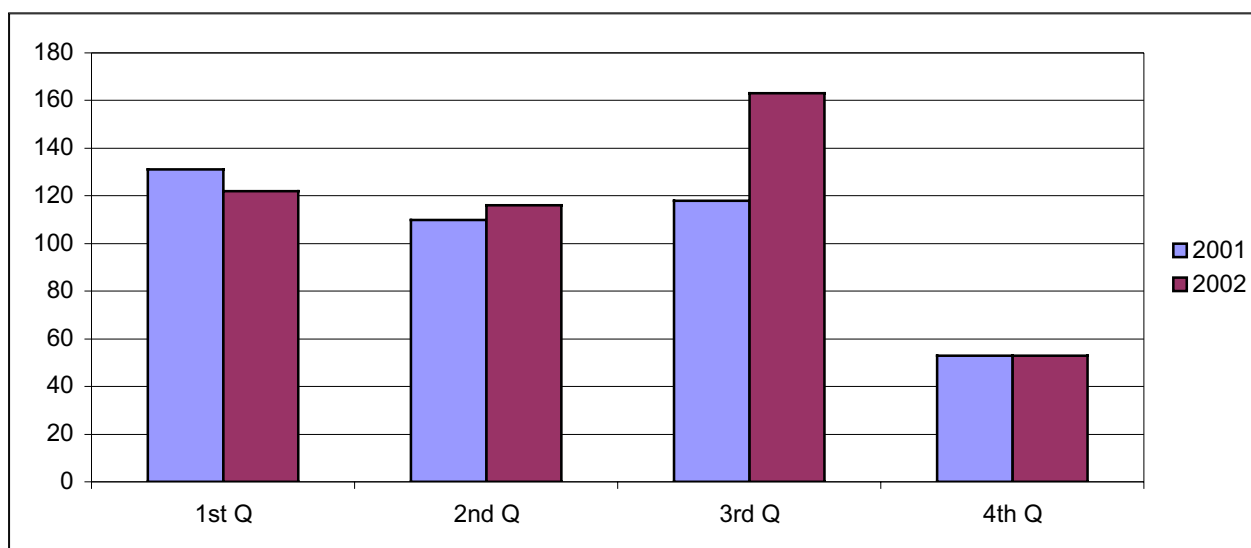
The CD-ROM network saw a drop in usage of 48% (*Fig 5*) but this was not entirely due to the introduction of MetaLib; it followed a general trend as the Library made more CD-ROMs available electronically.

Fig 5 CD-ROM network usage



Non-networked CD-ROMs saw a rise of 1.78% in usage for the same period (*Fig 6*). These are listed on MetaLib and therefore confirms that it was beneficial to include them. This trend will be monitored and consideration given to their inclusion in the future.

Fig 6 Non-networked CD-ROM usage



Many databases saw an increase in usage (*Table 1*). These figures are provided by the database suppliers and are based on either the number of searches or the number of logins, depending on the format used by that supplier. The statistics are based on searches or logins to the native interface of the database and exclude figures of searches conducted via Z39.50, that is the searches done via MetaLib. Some showed dramatic increases, for example, Zetoc rose by 1,385% and SportDiscus by 1,207%. It is also pleasing to note that some databases that were not cross-searchable saw an increase in usage, for example, ICEA went up by 225% and ABES by 36%. This illustrates that MetaLib is a useful tool to promote databases as it enables them to be grouped together by subject and encourages use.

Table 1 Databases showing an increase in usage

Database	Percentage increase	Based on
Zetoc	1,385%	Number of searches
SportDiscus	1,207%	Number of searches
ICEA	225%	Number of logins
Inspec	73%	Number of searches
OCLC	79%	Number of searches
ABES	36%	Number of searches
IBSS	31%	Number of logins
Beilstein	23%	Number of logins
MIRA	21%	Number of logins
ABI	27%	Number of searches
MathSciNet	15%	Number of searches
Web of Science	9%	Number of logins
BEI	3%	Number of logins

The databases which showed a decrease in usage (*Table 2*) were not cross-searchable in MetaLib and tended to be quite subject-specific. This would indicate that publishers who do not make their databases more accessible may see a decline in usage and perhaps in subscriptions. The exception to this are the usage figures for Compendex, the engineering database, which has shown a decrease in usage, despite being cross-searchable.

Table 2 Databases showing a decrease in usage

Databases	Percentage decrease
PsycInfo	-63%
Lexis-Nexis	-51%
Mintel	-36%
Rapra	-30%
UKOP	-6%
Art abstracts	-12%
Compendex	-4%

In version 2.12 MetaLib provides statistics on logins and the number of searches carried out in particular databases. These illustrate that six databases nearly always appear in the top ten searched databases (*Table 3*) and that usage of MetaLib is low over the summer, as expected, and considerably higher in October (*Table 4*).

Table 3 Top ten searched databases

	June 2003	July 2003	August 2003	September 2003	October 2003
1	ArticleFirst	Zetoc	ArticleFirst	ArticleFirst	ArticleFirst
2	Zetoc	ArticleFirst	Zetoc	Zetoc	Zetoc
3	IBSS	IBSS	IBSS	IBSS	Ante
4	OPAC	ASSIA	ASSIA	ABM	IBSS
5	Ante	Ante	Ante	OPAC	ASSIA
6	ASSIA	OPAC	OPAC	Ante	OPAC
7	Compendex	Inspec	Inspec	ASSIA	Inspec
8	Inspec	Compendex	Compendex	Inspec	SportDiscus
9	BHI	SportDiscus	BHI	Ceramic Abs	Medline
10	Medline	Medline	SportDiscus	Compendex	BioSci
11	Comp & Info	Eng Mat	Medline	Medline	Compendex
12	BioSci	Polymer	Polymer	SportDiscus	Comp & Info

Table 4 Number of logins

June 03	July 03	August 03	September 03	1-17 Oct 2003
2,322	4,700	4,082	5,372	12,795

User Survey

A survey which specifically targets the users of MetaLib has not yet been carried out, but the use of MetaLib was included in the general Library User Survey. For the latest of these, in March 2003, shortly after the launch of MetaLib, 500 forms were distributed and 228 responses received (47%). There were also 45 on-line responses. Roughly 45% of all respondents stated that they had never had occasion to use either the full text or bibliographic databases. This is probably because readers were still not aware of what these services can offer or did not feel that they are relevant to their needs. Both these reasons will have implications for information skills training. Only 34% of respondents stated that they had never used MetaLib.

It was apparent from the survey that undergraduate use of MetaLib was lower than postgraduate and academic staff use; a third of respondents in these last two categories used MetaLib regularly.

Further feedback

Following the launch of MetaLib and SFX the Academic Librarians found that MetaLib made the concepts of searching for information easier to explain, and this had helped them at the Enquiry Desk. MetaLib was easy to demonstrate and it was possible to print off a list of databases for a student, which related to their subject.

The 'correct' way to search on MetaLib has been the cause of some discussion between researchers and the Academic Librarians. Researchers often wish to conduct a quick search of all relevant databases and view the 'cross-searched' results. Academic Librarians would prefer users to carry out detailed searches in the native interface of the database. It was felt that some researchers may need further training in the selection of databases and appropriate keywords.

Users are not always sure about the role of the non-searchable databases and how to access these from the CD-ROM network. It was decided to put brief advice on how to do this on the search pages.

Feedback from users of MetaLib is positive; they found it easy to find databases relating to their subject without having to go into each database individually. Comments included:

I am using the E-Journals and MetaLib via an off-campus computer – Thanks, this is a really useful tool for me! (Student – Executive MBA)

A very useful resource.

I really like MetaLib, I love playing with it!

Constructive criticism was also received from academic staff; the most common request was for the journal title to be displayed on the results list, so they can identify the journal, and therefore

evaluate the quality of the search result, with ease. A suggestion was also made that the URLs which appear on the information screen should be hotlinks. There should also be a facility to select all the records on the results page with one click. Much of the feedback given to the Library was forwarded to Ex Libris and in many cases, acted upon. For example, in version 2.12, there are now hotlinks to the database guides from the 'Information' pages, although users still cannot select all records from a search result with one click.

MetaLib Group

Although the implementation of MetaLib benefited from the participation of a large group in the first stages of the project, it was decided in November 2002 that a smaller group would be formed to ensure that MetaLib is kept up to date. This was comprised of one representative each from Systems and Support Services and two Academic Librarians. Membership of this group is to be on a rolling basis and access to the cataloguing module is confined to the group's members to ensure consistency.

As usage increased, any problems reported to the Enquiry Services staff were logged so that these could be acted upon by the smaller MetaLib group.

Impact on workflow of library

During the setting up and implementation of MetaLib and SFX, there was a huge amount of commitment on the part of the Academic Librarians and other staff involved in the project. Considerable time was taken in tailoring MetaLib to the needs of the Library and in cataloguing and configuring databases. Training was, and continues to be, part of the workload associated with MetaLib, although a *Guide to MetaLib* and an interactive electronic tutorial are now available (*see pp.15-16*).

A summary of staff time spent on MetaLib is shown in Table 5 :

Table 5 A summary of staff time spent on MetaLib

Task	Who responsible	Time spent
Managing the project	Academic Librarian	6 days (approx) 0.25 day a week for 6 months
Training	7 Academic Librarians, 2 staff from Support Services, 2 staff from Systems Team and Ex Libris	44 days (approx)
Technical Support — pre-implementation	Systems Team	1 day
Technical Support — implementation	Systems Team	31.5 days (included changing web interface, setting up cross-searchable databases, setting up resource categories, organising authentication etc.)
Technical Support — on-going	Systems Team	0.5 day per week (includes running various clean-up routines, making word changes to the interface, investigating oddities with the system and answering questions about MetaLib)
Meetings to discuss implementation	MetaLib Group	108 hours. 9 meetings of 1.5 hours, 8 people present on average.
Cataloguing	Academic Librarians	10.5 hours approx. 130 databases, approx. 5 minutes per item.
Configuration	2 Academic Librarians, 1 rep from Support Services, Systems Team	5 days approx. done on an ad-hoc basis following the time spent in the Ex Libris training session.
Writing to suppliers to check Z39.50 compliance of databases	Academic Librarian and rep from Support Services	1 day approx, although not completely successful
Testing MetaLib	MetaLib Group	5.5 hours approx. 65 cross-searchable databases, 5 minutes per item
Speed tests	Library staff	7.5 hours approx. 3x half hour slots to test speed of service. 5 staff
Pilots	Academic Librarians and Systems Team	9 hours approx. 3x hour and a half demonstration and discussion. 2 staff for each.
Upgrade of MetaLib	MetaLib Group	0.5 day. Opportunity to tidy records, include icons and add links to database guides.
Upgrade of software	Systems team	0.5 day
Upgrade — testing of cross- searchable databases	MetaLib Group	5.5 hours. 65 databases, 5 minutes per item
General maintenance	MetaLib Group	0.25 — 0.5 days per week. Answering enquiries, adding databases and web sites, contacting suppliers when Z39.50 servers down.
General maintenance — technical	Systems Team	0.5 day approx. Technical queries
Training	Academic Librarians	14.5 hours approx. 13 sessions
Writing of interactive online tutorial	Academic Librarian	1 day
Visits from other libraries	Academic Librarian and Systems Team	Frequent
Talks to external meetings	Academic Librarian and Systems Team	40 minutes approx. 2x 20

The time spent on the implementation and running of MetaLib has been a wise investment. Although initially some areas were taking more time than anticipated, such as the configuring of databases, the final result has been a valuable resource for the University Library. The investment has benefited both staff and students alike in increasing their accessibility to electronic resources. On-going maintenance of the library portal is additional to the other tasks required of the staff, but as increase of the Library's databases and electronic resources has increased dramatically, the time and effort which is spent is worthwhile.

Library staff skill sets

During the implementation of MetaLib it was found that the following skills were utilised:

- a basic knowledge of cataloguing to ensure resources were catalogued to a reasonable and consistent standard
- a basic knowledge of MARC which assisted with the configuration of resources, especially how data was presented within the search results of MetaLib
- good knowledge of resources (both commercial and those freely available on the web) so that appropriate resources were selected and placed on MetaLib
- good marketing and communication skills so that MetaLib was effectively promoted and demonstrated
- training skills

Academic Librarians at Loughborough already possessed these skills so there was no major alteration to their existing skills set. It should be recognised, however, that where there are few staff resources, the implementation of a library portal may have implications for training.

The skills mentioned above continue to be used as MetaLib develops, in particular by those who are part of the MetaLib group at Loughborough.

Enhancements

During implementation Ex Libris were able to offer advice on how to enhance and/or customise some aspects of the product, but some comments and suggestions were not possible within version 1.3. These were therefore forwarded to Ex Libris as enhancements. These included:

- adding the journal title to the brief results screen so that academic staff could use this for selection purposes
- increasing the number of databases linked to each information gateway so that a complete list of resources was available for each academic department
- ability to allow Academic Librarians to rank the databases listed under each information gateway in order of relevance
- selecting what information is viewed under the information icons to make it more concise and user friendly

- being able to enter ‘hotlinks’ in the information icons for database guides

Ex Libris seemed very positive about receiving feedback, but not were not very communicative about what might happen next and therefore the Library was unsure whether they would be acted upon. However, when version 2.12 of MetaLib became available, it was clear that the suggestions made by staff at Loughborough had been adopted by developers at Ex Libris, as many of their suggestions had been included in the new version.

Update of MetaLib

Loughborough were informed that version 2.12 of MetaLib would be available in December 2002. This meant that the Library needed to decide when to upgrade and it was recommended that April 2003 would be an appropriate time. The problems with speed in accessing MetaLib, which was an intermittent problem with version 1.3, are not present in version 2.12.

Version 2.12 has a different look and feel to version 1.3, but has similar search functionality. For example, version 2.12 has a change of colour and the terminology differs from version 1.3. ‘Information gateways’ have become ‘resource categories’ and the layout of the search screen is slightly different. The resource categories are now drop-down menus rather than permanent lists on the left hand side of the screen and databases are listed in alphabetical order rather by cross-searching or linking to facilities. In addition, many of the enhancements the Library had requested have been included in version 2.12: the results of the search appear in citation format with the journal title included rather than in tabular format, more databases can be linked to each resource category (information gateway) and hotlinks to database guides can be included in the information icon.

Additional functionality has also been added to version 2.12 as MetaLib can now provide lists of e-journals. These are created through utilising tools within SFX. It is understood that this option will be further enhanced so that subject lists of e-journals can be created. To date Loughborough University Library has not implemented the e-journal option, but plans to do so next year.

The cataloguing and configuration screens have also been tidied and made more logical. Configuration is now much simpler as most of it is undertaken on configuration record forms within the management system.

A change in culture

Although a structured survey of the habits of usage of MetaLib has not yet been carried out, the weight of anecdotal evidence suggests that staff and students like the search methods MetaLib can provide. The usage statistics reinforce this evidence; there has been a significant increase in the use of electronic resources. In one instance this has been a ten-fold increase compared with the equivalent before the implementation of MetaLib. There is still some concern about the way in which users are searching, but until further surveys are carried out, the exact methods of how they decide which databases to search, will not be determined.

Academic Librarians have found that the concept of searching for information is easier to explain through the demonstration of MetaLib, although it is recognised that staff and students will still require librarians to facilitate their access to information.

The future

Further enhancements are planned. Loughborough would like Ex Libris to include the following to their product:

- subject listing of e-journals
- facility to choose what data appears on the information icon page
- the facility to have more ‘hotlinks’ on the information icon page - e.g. links to publishers guides and inter-active tutorials
- on the Search Results screen, the number of hits to be a ‘hotlink’ rather than having a separate icon - this would make it more like Aleph, the library management system
- in the brief citation record, would prefer the author to appear first

The MetaLib group at Loughborough also intend to make full use of the functionality version 2.12 of MetaLib provides, by utilising the e-journals option. The staff are working with Ex Libris to make more databases cross-searchable. The University is also involved in giving feedback to Ex Libris on the prototype of version 3.

Surveys of MetaLib users are planned in order to ascertain how they are using the information they find in MetaLib and how they searched for that information. The training of staff and students is on-going and it is recognised that further training may be required to help students better evaluate and select resources for their studies and research.

Recommendations to potential clients

From the experience of the staff at Loughborough University Library, the implementation of a library-oriented portal is a time-consuming but extremely worthwhile experience. MetaLib has facilitated more effective searching of the Library’s databases and has increased usage of the Library’s resources. The following recommendations could act as a guide to those in FE and HE who are contemplating the implementation of a portal:

- Form a working party to implement the portal. Include someone in-house who has technical expertise. Consult all appropriate staff including Systems staff
- Recognise that certain skills, such as cataloguing, marketing etc. may be necessary
- Decide what the library wants from the product. Contact suppliers for information and cost
- Look at other institution’s library portals and arrange a site visit before any training session from suppliers (Loughborough University Library are willing to have pre-arranged visits from interested institutions)
- Decide who would benefit most from the supplier’s training session and consider cascade training if more appropriate

- Make full use of any supplier's training session. Prepare questions beforehand. Also find out in advance what can be achieved in the training session
- Test thoroughly on and off campus
- Pilot the portal and use feedback to make suggestions to supplier
- Limit local customisation to ease any upgrading of the system
- Use the system as a means of promoting all the databases, not just those which are cross-searchable
- Ensure statistics are available to evaluate usage
- Market the portal
- Build in time for on-going maintenance, cataloguing and training

Conclusion

Loughborough University Library was an early implementer of a library portal in the UK and as such became involved in many of the 'teething problems' associated with the first version of MetaLib. Working with the supplier, Ex Libris, was an essential part of the development of the portal in order to suit Loughborough's requirements. Similarly, early problems with the suppliers of electronic databases, such as compliance with SFX, have also been addressed and, in the majority of cases, resolved. Adopters of library portals may still encounter some problems but will find suppliers better equipped to find a solution.

Loughborough found that it was essential to pilot and test the library portal thoroughly as this highlighted any problems with the system, as well as providing useful feedback. It is also beneficial to consult with all appropriate staff, including Systems staff, who will provide necessary technical expertise.

The amount of staff time involved in implementing a library portal may be a hidden cost, but it is Loughborough's experience that the time is a worthwhile investment. Ongoing maintenance of the portal is another consideration, but again, time well spent. Information skills training is still required, but librarians have found that the concepts of searching for information have been easier to explain through the demonstration of MetaLib. The usage of electronic databases to which the Library subscribes has increased dramatically, and while structured surveys on users' experience has still to be carried out, anecdotal evidence suggests that the library portal is proving to be a useful addition for both staff and students.

It is intended that this report will help to address some of the queries institutions may have with regard to the implementation of a library portal. Loughborough's experience should alert librarians to possible challenges and the report has provided a list of recommendations which act as a guide to those thinking of implementing a separate library portal. It is also intended that this report will demonstrate the benefits of adopting a library portal; in the increase of usage of databases and in the enhancement of learning and research.

Appendix 1

Timescale of the implementation of MetaLib and SFX at Loughborough University Library

Date	Task
January 2001	MetaLib purchased at same time as new Library Management System, Aleph. Decision taken to delay MetaLib until new system running.
March 02	Installation of MetaLib on server
18-20 March 02	MetaLib training
4-5 April 02	SFX training
11-1 April 02	Creation of Information Subject Gateways
11—26 April 02	Cataloguing of databases
Early May 02	Testing of MetaLib by Library staff
May 02	Demonstrations of MetaLib to Library staff (by Academic Librarians)
May 02	Customisation
24-27 June 02	MetaLib pilot in 3 Departments
2 September 02	Live date
September 02 — on-going	Marketing
April 03	Upgrade implemented
