

# COLLABORATE TO SUCCEED: A CONSORTIAL APPROACH TO IMPLEMENTING AARLIN

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## ABSTRACT

Collaboration between university departments and across universities is becoming increasingly important in implementing high-cost projects requiring sophisticated technical knowledge, as well as knowledge of the research environment. The Australian Academic and Research Library Network (AARLIN), is a consortial approach to providing an information portal delivering seamless access to the electronic information resources of Australian university libraries from the desktops of staff and students.

This paper briefly outlines the background to AARLIN, the service model, the architecture model, and the features that AARLIN provides to university staff and students, including federated searching across a diverse range of information resources, deep linking and context sensitive services. The authors discuss aspects of the collaboration between library and IT, benefits and disadvantages of the consortial approach, challenges in the management of the AARLIN service from the consortial perspective, the administrative and legal framework, and the business model. Possible future initiatives include linking with e-learning environments. The perspective of an individual participating institution in the consortium, La Trobe University, is also presented.

## 1 INTRODUCTION

The implementation of an information portal is a significant initial and ongoing cost for an individual institution encompassing infrastructure costs (hardware and software) and staff support costs for implementation and maintenance. Collaborative initiatives that have been undertaken to establish information portals have varied in nature and approach.

For example, in the Scholars Portal Project launched in 2002 by the Association of Research Libraries (ARL) in the United States, seven ARL members have implemented the Fretwell Downing Informatics ZPortal product to explore the concept of a scholars portal. (<http://www.arl.org/access/scholarsportal/>) In the Netherlands, eight universities have collaborated to select the software to implement their portals, negotiating jointly to purchase the Ex Libris MetaLib/SFX software. The consortium FinELib in selected MetaLib/SFX to create a national portal service in Finland. Initially the National Library of Finland is providing the country's twenty universities with basic portal configurations that the libraries will be able to extend themselves. The portal will be expanded to include other members of the consortium and thus create a national portal for the whole country. (<http://www.lib.helsinki.fi/finelib/english/>) Kooperativer Bibliotheksverbund Berlin-Brandenburg (KOBV) has implemented a portal that gives access to the catalogues and services of all participating libraries using the Ex Libris products. (<http://www.kobv.de/englisch/content/home/home.htm>)

The Australian Academic and Research Library Network (AARLIN) is an initiative of a group of Australian universities to provide an information portal that differs from these other approaches and offers a unique example of collaboration in this area that has been recognised internationally. (<http://www.aarlin.edu.au/>)

## **2 DISCUSSION**

### **2.1 BACKGROUND AND HISTORY**

The Australian Academic and Research Library Network was initiated in 1999 by the Council of Australian University Librarians (CAUL) as a strategic framework for collaboration to develop a national portal to facilitate seamless access to the digital and analogue resources of Australian university libraries. In 2001 a group of twenty Australian universities and the National Library of Australia obtained funding from the Australian Research Council to conduct a pilot with the aim of demonstrating proof of concept. Six universities and 120 researchers actively participated in the pilot in 2001-2002. (Parker, Gow, and Lim, 2002) Following the success of the pilot, an application for funding from the Australian Government's Systemic Infrastructure Initiative was made by La Trobe University with the support of eighteen other Australian universities and the National Library of Australia. The aim of the second phase of the project was to provide an operational service for university staff and students that would enable them to search a broad range of information resources including library catalogues, resource discovery databases, full text resources, and web sites, with a single query. The application for a three year project to be carried out from 2002-2004 was successful.

Ex Libris had provided their MetaLib and SFX software for the pilot. While the software had been used with some success during the pilot, it was deemed important to survey the market given the rapid advances being made in portal technology and the requirement for the AARLIN service to support a consortium of up to twenty universities. Following Request for Information and Request for Proposal processes, the Ex Libris MetaLib and SFX software was selected and a contract with Ex Libris was signed in December 2002.

During 2003, hardware and software installation occurred and training of staff in member institutions was conducted. Members commenced configuring resources and training library staff in-house in preparation for implementation. In 2004 the AARLIN member institutions commenced rolling out the system to their staff and students. By the end of the year, eight of the twenty university members of the project had introduced the system to their communities.

The funding for the AARLIN Project ceases at the end of 2004. A business plan has been developed to ensure the sustainability of the system for the twelve institutions from five states and territories who are continuing as members of the AARLIN consortium from 2005.

### **2.2 SERVICE AND ARCHITECTURE MODEL**

The AARLIN service model is consortium based and utilises the Enterprise edition of the Ex Libris MetaLib and SFX software that supports multiple institutions rather than a single institution. The Enterprise edition was developed and influenced by the requirements of AARLIN during the pilot phase of the project, and the AARLIN influence has also produced benefits in the latest version of MetaLib (Version 3). Collaboration is the key to the success of AARLIN and this is enlarged upon in later sections of the paper.

The AARLIN service is built upon a central portal which is linked to the local authentication systems of participating universities. (Figure 1) In the absence of a national standard for authentication systems among Australian universities, links from AARLIN to the authentication systems of individual universities have been developed. Current projects such as the Meta Access Management System (MAMS) to develop a standard for authentication systems may provide a simpler solution for this aspect of AARLIN in the future. ( <http://www.melcoe.mq.edu.au/projects/MAMS/> ) In the current scenario, when a user logs on, he/she is authenticated as an authorised user by the portal communicating with the authentication system of the user's institution.

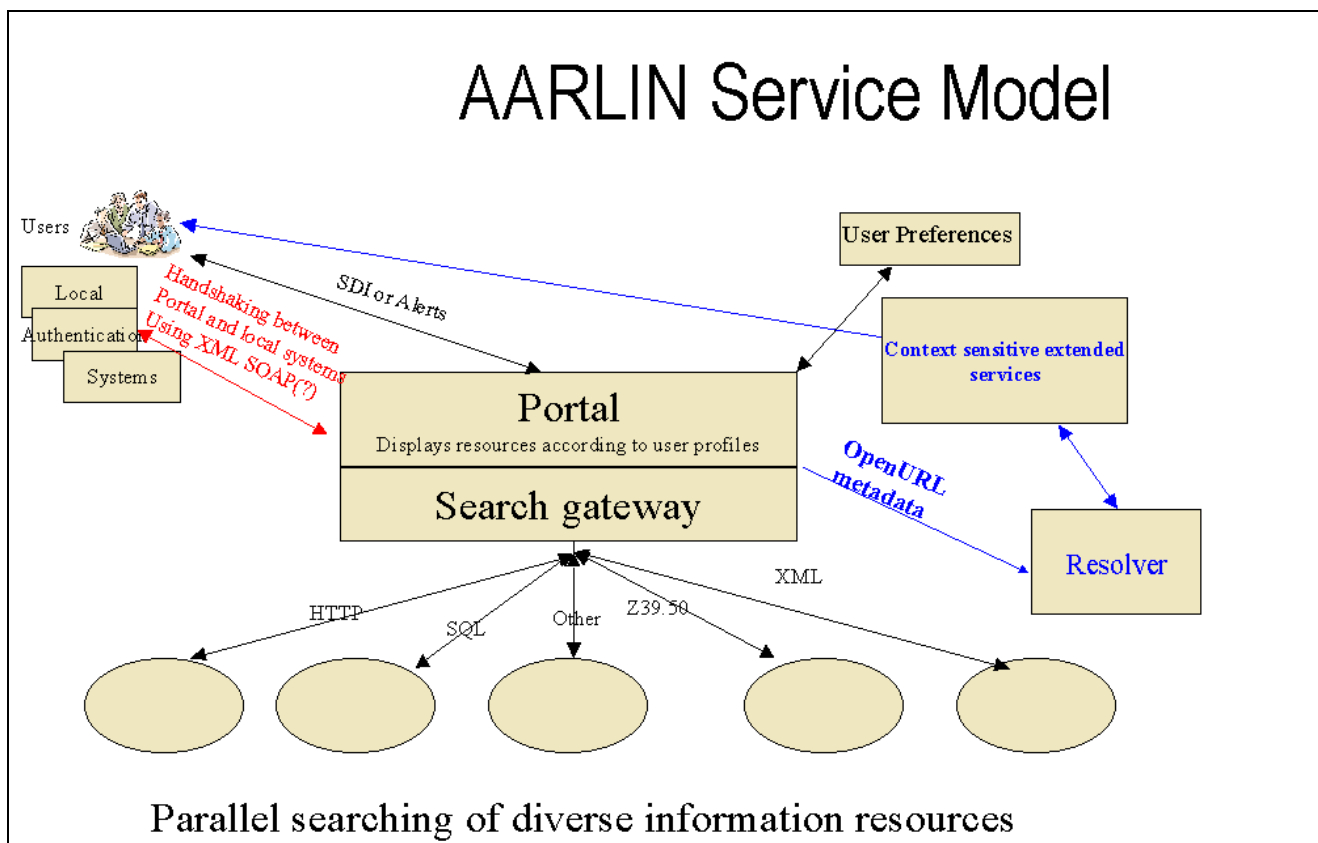


Figure 1: AARLIN Service Model (Parker, Gow and Lim, 2002)

The existing system architecture comprises a suite of central servers for production and test/back-up located at La Trobe University. The staff in the AARLIN Office manage the servers in association with the University Information Technology Services. The AARLIN staff also provide ongoing training for participating institutions, and a range of technical support including assisting participants with interfacing their authentication systems with MetaLib, a help desk and an email discussion list. Each participating institution has their own MetaLib instance on the central server and, to a large extent, is able to configure the instance for local requirements. The participants share a Central KnowledgeBase of configured resources. Resources may be configured to accommodate the common requirements of the AARLIN participants, or further configured for individual institutional requirements. Nominated personnel in each institution have access to the management interface of the MetaLib/SFX software to coordinate and operationalise the configuration of resources and SFX targets.

The future architecture model for AARLIN will be designed to accommodate growth in the number of users to encompass all staff and students of the participating institutions. Additional servers will be required to support the members from 2005. Initially the servers will be located at the central site. However the geographic distribution of the members across Australia may require some consideration of a distributed model in the future. One model that may be considered is a master-mirror model in which a number of servers would be established at different geographic locations, each being an independent MetaLib installation. One of the servers would be defined as the master server that would contain all the relevant data i.e. all the KnowledgeBase data and MetaLib set-up data for all member institutions. Each mirror server would serve a specific number of universities; it would contain a mirror copy of the MetaLib software and would contain the data for the users of those specific universities. All authentication data would be set up on the master server and copied to all mirror servers; if one of the mirror servers crashes, users would be able to continue using AARLIN by accessing other mirror servers.

## 2.3 FEATURES OF THE AARLIN SERVICE

Federated searching via MetaLib is a feature of the AARLIN service that allows users to search up to eight electronic resources simultaneously, including library catalogues, image and full text databases, journals, books or subject gateways. One of the benefits of federated searching is the generic interface which means users have only a single interface they need to learn, with a consistent citation format and consistent download and print commands (Cervone, 2004).

The SFX software uses the OpenURL framework to provide deep linking to full text where electronic subscriptions are held by the participating library. In addition, where full text is not locally available, SFX allows a customisable menu of options, including the ability to request items on interlibrary loan by populating a web-based form with appropriate metadata.

In addition to matching a user's discipline in the pre-selected resources, users can further personalise their space to reflect their own subject interests. They can set up lists of databases they prefer to search. They can also save searches and re-run them or set them up as alerts, to be run regularly and the results emailed. The user can also set up 'Folders' of relevant citations located via an alert or a current search. A particular feature of such Folders in MetaLib, is the maintenance of any links such as an SFX link to the full text.

Quicksets are a feature which has become available with the release of MetaLib Version 3.11. These provide the opportunity for an organisation to set up very specific sets of resources. For example, a librarian may create a Quickset to support the students in a particular subject or course, even to the level of supporting an individual assignment or project.

At La Trobe University, the AARLIN service was first rolled out to users in the guise of a 'soft launch' to researchers in two faculties: Health Sciences, and Humanities and Social Sciences. Feedback on MetaLib Version 2 was sought from users in a variety of ways: participants of training sessions were invited to complete feedback forms and they could either do that at the conclusion of the session, or take the form with them and return to the trainer at a later date; a web-based feedback form was also set up to appear as users logged off from MetaLib. Most of the feedback received was positive but some feedback was critical of the interface. The following quotes are examples of what clients did and didn't like.

### **What clients did like ...**

"The concept of searching multi-databases is fantastic. I am very impressed"

"Liked that you can search a number of databases at once and that you can save what you've searched"

"Ability to search 5 databases at once"

"That you can save your search could merge databases and search them together"

### **What clients didn't like ...**

"Not enough full text available"

"It is a lot to take in, it will take a bit of time to become familiar with all the things it can do"

"Windows opening on top of each other"

## 2.4 COLLABORATION

Collaboration between university departments and across universities is becoming increasingly important in implementing high-cost projects requiring sophisticated technical knowledge, as well as knowledge of the research environment. The establishment and implementation of a large scale, national project such as AARLIN required collaboration between various players on a number of levels. University librarians and IT directors steered the project. IT directors provided advice on authentication, understanding network traffic in the consortium environment, and possible infrastructure models for a geographically distributed consortium. They also contributed to the selection of software and advised on hardware requirements.

At La Trobe University, Information Technology Services staff advised on the use of LDAP as the authentication system for AARLIN. The AARLIN service was to be trialled across three campuses of the University: the main campus in metropolitan Melbourne and two regional campuses located 200km

and 300km respectively from the main campus. A number of electronic resources had licenses restricting their use to a specific campus, so various fields in LDAP were used to protect the complex license requirements of some resources, ensuring only those entitled to access certain materials could do so.

Collaboration was also required from library staff at the twenty participating universities in working to mount such a large-scale project. At an early stage during the implementation, it was recognised that a unique combination of skills and abilities were needed to assist in the configuration of resources into the MetaLib environment. A handful of staff across the participating libraries possessed these skills, so a Quality Team was established. This Team of three worked on behalf of all other member institutions, configuring primarily Australian resources to the MetaLib environment.

The collaborative nature of the project assists in keeping the costs down for participating libraries. Normally the costs of developing a portal project are significant, but sharing the costs of hardware and software among participating institutions keeps these costs to a manageable level. There is also the sharing of resources in terms of staff time and salary savings. Participating institutions were divided into four groups and assigned resources for configuration within specific disciplines. La Trobe University was a member of the group assigned the health sciences and multidisciplinary resources to configure. Once this work was complete, other members of AARLIN were able to copy configurations and customise with appropriate local information.

## **2.5 BENEFITS AND DISADVANTAGES OF THE CONSORTIAL APPROACH**

During the early days of implementing the Ex Libris software, one of the challenges was the need to train a large number of staff located in geographically dispersed areas. Training was conducted in three states of Australia, with institutions sending their staff to the closest training site. The number of trainees was limited and participating institutions could send only two staff to each training session. Ex Libris provided a trainer, and two to three days of training was presented for both MetaLib and SFX. Unfortunately, the intensive nature of the training did not allow sufficient opportunity to deal with issues which were unique to a participating institution. There was also very little time available for 'hands on' practice in the software by participants. La Trobe University Library staff returned to the workplace following SFX and MetaLib training with a fairly hazy idea of what they needed to do to commence implementation. Fortunately, the creation of an email discussion list of consortium members by the AARLIN Office provided a forum for queries and support in implementing the MetaLib and SFX software.

Although the twenty participating universities were implementing the same AARLIN service, there has been a level of flexibility in the way they present the service to their own user communities. For example, the webpage can be branded with each institution's logo. La Trobe University has branded the service as "LibXplore – the La Trobe AARLIN service", as well as implementing its corporate colours and logo. There is also the ability to alter the SFX "swirly" button. A number of institutions have adopted the "Find it" phrase believing this has more meaning for their users.

An important aspect of the consortial approach has been the need to gain consensus on some decisions, before moving ahead to implementation. When implementing MetaLib Version 2, AARLIN members needed to agree on the number of citations which could be combined into a merged de-duplicated search results set. This was set consortium-wide at 300. With the implementation of MetaLib Version 3, new decisions were needed across the consortium including the sort order of search results, the idle user session time-out setting, and whether or not to merge results sets.

Members of the AARLIN consortium come together at Reference Group Meetings to share experiences and discuss problems and strategies for solutions. Each participating institution sends their AARLIN Co-ordinator and in many cases, the university librarian also attends. These have been very useful forums for demonstrating and describing the roll-out of the AARLIN service during 2004 at those universities that went live with MetaLib Version 2, and subsequently, the experiences with Version 3. In addition, the co-ordinators and operational staff remained in touch via monthly teleconferences organised by the AARLIN Office.

The role of the AARLIN Office and the systems support they provide may have limited the involvement of an institution's systems staff. This could mean that university systems staff are less familiar with the system and may demonstrate less ownership of the system. This perceived disadvantage depends very much on one's perception, as the situation could also be perceived as an advantage in that local staff have not been required to develop in-house expertise in yet another system.

## **2.6 MANAGING AARLIN**

The funding from government grants for the AARLIN Project will cease at the end of 2004. For those universities continuing with AARLIN as an ongoing service for their staff and students beyond the project phase, a business model and associated administrative and legal framework had to be developed.

### **2.6.1 ADMINISTRATIVE AND LEGAL FRAMEWORK**

Various options for the administrative and legal framework were canvassed and three models were considered:

- One of the participating universities undertakes to run the AARLIN system
- Outsource the running of the AARLIN system to an external company
- Establish a company jointly owned by the participating universities to run the AARLIN system

The first model was selected. La Trobe University has undertaken to run the AARLIN system as the Administering Institution on behalf of the twelve universities participating from 2005. A Memorandum of Understanding (MOU) among the members of the AARLIN Consortium has been drawn up to establish the Consortium for a period of three years. The MOU sets out the obligations of La Trobe University as the Administering Institution and the obligations of the Participating Members. The services that La Trobe will provide as the Administering Institution include managing the portal in accordance with the strategic directions identified by the Consortium and the approved budget; staffing and supporting the AARLIN Office; ensuring that payments are made relating to software licensing and maintenance, hardware acquisition, etc; providing technical support to members; and liaising with Ex Libris in relation to software problems, fixes, upgrades and developments. As the Administering Institution, La Trobe will enter into an agreement with Ex Libris for the software maintenance.

The obligations of Participating Members will include establishing mechanisms to monitor changes to their e-journal and database subscriptions and ensuring that those changes are reflected in the AARLIN configurations; meeting the AARLIN implementation and quality assurance guidelines; and the appointment of an AARLIN Coordinator whose responsibilities include liaising with the AARLIN Office, training of staff and authorised users in their institutions, promoting the AARLIN Portal to authorised users, providing local support, collaborating in configuring targets, and troubleshooting and documenting problems and reporting unresolved problems to the AARLIN Office. La Trobe University will have obligations as a Participating Member as well as obligations as the Administering Institution.

A key responsibility of member institutions will be their participation in the Management Committee of the Consortium. This Committee will determine the strategic directions of AARLIN, approve the operational plan, approve the annual budget, and maintain oversight of the AARLIN Portal. Each Participating Member will provide a representative for the Management Committee.

### **2.6.2 BUSINESS MODEL**

In developing the business model for the AARLIN Consortium, all costs were identified in the budget including administration, accounting and legal services, office facilities, telecommunications and facilities management. These had been provided by La Trobe University during the project phase as the contribution of the lead institution. Other costs identified were hardware purchase, software and hardware maintenance, staffing, Internet access, and so on. The members of the Consortium range in institution size and it was agreed to implement a cost-sharing model based on the number of equivalent full-time students. This is a model of cost sharing that is widely used and accepted among Australian universities. The membership fee for each institution is based on a flagfall, plus an amount per equivalent full-time student. The annual increase in fees will be no more than the Australian Consumer Price Index.

## **2.7 FUTURE INITIATIVES AND ISSUES**

The AARLIN Project was initially proposed to provide a service for researchers; that has been expanded to include services for undergraduate students in addition to academic staff and postgraduate students. Opportunities exist to expand AARLIN further to provide additional services. These could include:

- Integration with research management systems.
- Integration with university wide portals.
- Integration with e-learning systems such as WebCT and BlackBoard.
- Distributed searching of institutional repositories of learning objects and research publications, and open archives.
- Implementation of a secure payments system.
- Implementation of a digital rights management system.
- Provide access to 24x7 collaborative reference services.
- Integration with web based delivery of documents.
- Inclusion of non-university libraries as participants.

A set of issues that are beginning to emerge for individual libraries in the Consortium focus around where AARLIN fits in relation to other services provided by the Library.

- Most libraries maintain a web page that lists their electronic journals and databases. Will this still be necessary?
- Reference staff provide pathfinders and subject guides to resources in printed form and on the web. Perhaps AARLIN may provide a different approach that prompts a reconsideration of the need for guides in these formats.
- Some consortium members are including their library catalogue as one of the resources searched via MetaLib. What will be the role of the library catalogue vis a vis AARLIN?
- How should AARLIN be presented to users, especially undergraduates? The foregoing issues may encourage AARLIN to be presented as a primary approach for undergraduates in searching for information.
- AARLIN is a totally new service. There may be a need for collaboration within individual institutions to encourage a positive response from library staff to integrating and promoting the service.

These are issues that all Consortium members are likely to face, and a collaborative approach and a sharing of experiences may assist in working through the options.

## **3 CONCLUDING REMARKS**

The AARLIN Project commenced as a pilot to explore the feasibility of a consortial approach to the provision of an information portal. The success of the pilot was recognised and additional government funding was provided for a second stage to expand the service to a wider group of universities. AARLIN is now moving on to the next phase with twelve universities forming a consortium to implement a fully operational service for their staff and students from 2005.

AARLIN provides a new service that is already valued and regarded highly by the communities of the member universities. The AARLIN portal provides a service that at least some of those universities would not be able to render to their staff and students without the consortium. AARLIN is a demonstrator of the power of collaboration characterised by “the commitment and investment of resources, based on shared vision” (Hawkins, 2000).

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