



Macquarie University Research Online

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IS YOUR LIBRARY WEBSITE OBSOLETE? RENOVATE AND REMODEL IT

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ABSTRACT

This paper contains an overview of the creation of Macquarie University Library's portal including the formation of portlets explicitly based on individual course requirements. The focus of this paper is on the collaborative process by which academic staff, librarians and information technology specialists were able to create and deliver content for the Library portal.

We argue that a web presence composed of portlets is a user-focused method for delivering dynamic content on demand and as such is far superior in a learning environment as it provides a merged, cohesive and comprehensive delivery mechanism for tailored content.

In addition a portlet structure enables the Library to be proactive about the provision of content while providing a systematic information management and content architecture to ensure that consistency, reusability and quality of web-based content can be maintained. This portlet framework is a complete solution for both the problem of information delivery and the problem of information management.

1 INTRODUCTION

Providing a method for the improved web-based delivery of resources and services for disparate courses has been one of the Library's primary goals for a number of years. A standards based portal using portable and reusable portlets provides one way in which this goal can be achieved.

By adopting standards based portlets Macquarie University Library has attempted to integrate Library resources into the online presence of the wider University. This paper contains an outline of the rationale and development of the Library's portal including the development of user and unit profiles and the creation of individual portlets explicitly based on course requirements.

2 DISCUSSION

2.1 POSITIONING THE LIBRARY

At Macquarie University Library we believe that portals are the key to the future of electronic service delivery. On many existing library websites there is often a large amount of information that users have to navigate in order to find something specific. The majority of this information is not always relevant to the user. Particularly when the website caters for a large and diverse audience.

However, better managing this information in a library portal does not fully address the strategic or environmental issues present in a higher education environment. The Library did not wish to maintain a separate portal, which could not interact with the rest of the University, as this would defeat the purpose of having interoperable transferable content. An individual website would have been sufficient if all we required was a separate web presence.

The Library's presence in the University's online environment is important for the University community and enables the Library to market and facilitate access to library services and resources. Library services and resources are vital to the development of e-University activities.

At Macquarie University the Library is part of the integrated Division of E-learning and Information Services. This Division created in 2002 includes, in addition to the Library, the Centre for Flexible Learning and the Information Technology Services Department. The Division of E-learning and Information Services was formed with the vision that it would provide a “seamless service environment in support of teaching, research and community outreach” (Macquarie University, 2002, p.46)

The development of the Library portal with standards compliant portlets provides an opportunity for the Library to contribute to the seamless online environment by adopting a method for integrating library services into a single sign on environment where our user community can access material relevant to their needs and interests.

Macquarie University’s new Information Communications Technology (ICT) strategy also creates an environment where a library portal will be invaluable. This strategy is designed to closely integrate ICT and e-learning. So the more options the Library can make available online the better able they will be to support the University community as a whole.

To identify what the University community required we conducted usability testing on our existing website, consulted with academic staff in particular departments, interviewed users and researched the changing nature of user expectations. The results of these interactions and investigations highlighted the need to provide a breakdown of library services, study tools and resources by unit code. The unit codes used for the portal were created to focus on assisting with assignments and other aspects of unit specific study.

What we discovered was not surprising; the values of users of academic libraries and the values and expectations of Librarians in academic libraries tend to differ. The way they approach information and the dissemination of that information depends largely on the way they perceive the usefulness of the information and the access they can obtain.

The way users value information described by James Rettig in “Technology, Cluelessness, Anthropology and the Memex: the future of academic reference service” have been found to be true at Macquarie University. The differing expectations, values and needs of users and librarians can be addressed by unit based portlet content being pushed to particular user groups. The needs of users, which Rettig identifies, for immediacy, interactivity, mobility and personalization can be met and the factual, comprehensive and authoritative information which Rettig contends librarians prefer can be delivered to our users in a way that they value (Rettig 2003:p19).

The Library portal addresses both the Library’s need to be integrated into the wider university community and the changing expectations of our primary users.

2.2 THE LIBRARY PORTAL

The Library website has to cater for many different kinds of users. Each of these user categories has different service requirements and entitlements. As a result, our website had become a superset of combinations of users versus services and as one can expect, it is not easily managed or maintained.

Portals offer a different view of the Library world – a world where each user gets to see only the information that is relevant to them, without having to navigate through irrelevant information that was targeted at someone else.

2.2.1 WHAT IS A PORTAL?

Over the past few years, the term ‘portal’ has been used to describe many kinds of web-based functionality, from pathfinder web sites (sites with static links) to cross-searching tools (Miller, 2003). The approach to portals that we at Macquarie University Library are taking considers a portal to be a framework for providing an aggregation of web resources and services that is accessible to a user from a single point of entry. These portals also have the ability to provide personalization allowing the user certain freedoms in tailoring the portal to suit their needs. They can select only the services they wish to use. In an ideal configuration, single sign on (SSO) would be available to these services.

Services within portals are usually known as either channels or portlets. Channels tend to be specific to a particular portal framework and are usually designed to work only within it. Portlets on the other hand, are designed according to a standard and work with any standards compliant portal framework. For example a channel designed to deliver a library catalogue for one specific portal could not be utilized by a different portal with a similar catalogue product. A standards compliant portlet could be used in both instances.

The standard for portlet development is known as the JSR-168 Portlet Specification and was developed via the Java Community Process (JCP). The JCP program is a participative process that aims to develop and revise Java technology specifications, reference implementations and test suites in cooperation with the international Java developer community.

For examples of portlet standards and JSR-168 developments for portlets see:

Java Community Process

<http://jcp.org/en/home/index>

JSR-168 Portlet Specification

<http://jcp.org/en/jsr/detail?id=168>

Having a standard from which to be able to develop portlets has changed the scope of what we can do with portals and portlets today. We are no longer constrained to developing applications for a particular portal framework. As portlets are now portable across multiple frameworks, the cost of developing them has been significantly reduced while increasing their feasibility. One of the greatest benefits the standard offers is the ability to leverage off and contribute to the Open Source community in the development of portlets. An example is the Portlet Open Source Trading (POST) site <http://portlet-opensrc.sourceforge.net/> that allows contributions to the open source community by submitting portlet applications and allowing the general public to download and use them.

2.2.2 WHY ADOPT A PORTAL AND PORTLET APPROACH?

The key benefits of portals can be summed up as follows:

Personalization – users of portals have the ability to select the kinds of information that they require and have it presented to them in the layout of their own choosing. This allows them a level of customization that can maximize their productivity.

Single Sign On – users should not have to login to portal services after their initial portal login. The credentials for the portal login are propagated to the portal services, which can then be used to authenticate a user to the service in the background.

Aggregation – users can access a multitude of services from a single location. Instead of having to check out multiple pages on a web site, or even multiple web sites, a user can have the information they seek presented to them on a single page if desired.

Information Management – management of the content that we distribute to users can be managed more effectively and efficiently, allowing us a much better level of reuse without duplication.

Information Targeting - content can be targeted to specific groups of people such as Academic staff and/or Postgraduate students doing research or Library staff. This gives us a much more granular level of control for content distribution which saves users from being bombarded with irrelevant information.

Multiple Device Delivery – because of the way portals are structured, they have the ability to be rendered independently of the data that they contain. What this means is that using a different 'style sheet' for rendering can enable the same information and even similar functionality on devices such as PDA's and mobile phones.

The development of library related portlets and the ways in which these library specific portlets are integrated into the University's overall portal should allow the Library to be an integral part of a wider university web presence. Our use of standards compliant portal software ensures that any other portal that complies with the JSR-168 standard, whether open source or vendor specific, can deploy the portlets provided.

Achieving this integration means establishing and maintaining a variety of cross-university connections and partnerships, including participating in university wide strategic planning, divisional meetings and

technical projects. For example the development of the Macquarie University Portal to testing phase has required input and collaboration from the Library as well as the provision of several portlets for library services.

2.2.3 WHICH PRODUCT TO USE?

Macquarie University Library chose uPortal as the software for the portal project for a number of reasons. uPortal was created by an assembly of universities and is designed with universities in mind. Its continued development focuses on the needs of higher education institutions.

Primarily it was chosen because the uPortal product is not a one-size fits all predetermined solution. Rather it furnishes the necessary tools for the creation of a unique portal/set of portlets to suit the specific purposes of an institution such as Macquarie University Library.

uPortal is fundamentally a framework, which supplies classes, interfaces, XML files and XSL style sheets for institutions to employ in creating a portal. This 'framework' approach makes uPortal extremely configurable and flexible. It can be adapted for most institutional requirements and has proven extremely useful at Macquarie University Library.

In addition uPortal has another functionality, which makes it extremely flexible; it allows for the creation of transferable portlets that are standards compliant (JSR-168 standard).

These portlets can then be employed within other standards compliant portals. Therefore it is possible to serve a wide range of content to different portal applications. In terms of a large University this has made it possible for the Library to develop our portal with the knowledge that the developments we make can be utilized by or transferred into the University's portal.

Importantly for Macquarie University Library, uPortal is able to run on any platform that has a JAVA 2 implementation option. This means that the different platforms used within the Library and within the University can be brought together using uPortal.

The other aspect of uPortal, which makes it extremely appealing, is that, it is open source software. The open source nature of this product means that Macquarie University Library can adopt portlets developed and made available by other universities. This means that for a modest outlay mostly consisting of staff time the Library is able to provide a working portal.

The uPortal product also facilitates LDAP authentication and supports single sign on, making the management of content for particular patrons optimal for the Library. For more information on uPortal see: <http://www.uportal.org/index.html>

2.3 CREATE A SERVICE CATALOGUE

The service catalogue for a portal is the list of portlet and channel services that it provides. Users of a portal are generally allowed to select which services they require, and customize them, to suit their individual needs. Using a service catalogue to provide a relevant range of services to specific users, when they log in, enables the Library to promote services that the user can then customize further.

This level of customization is one of the benefits of portals. However, in order for a portal to be effective, the services that it provides have to be comprehensive as well as useful to the users. If the services do not meet the needs of the users, the portal, and it's potential benefits will be under-utilized.

At Macquarie University Library, we have assessed the most commonly used web-based services and are converting them over into portlet services. Our intention over time is to enhance our portal service catalogue and turn the portal into our users first port of call for all web-based services. One such enhancement is to provide unit specific services, resources and tools as part of our service catalogue.

The service catalogue forms the basis for what Library users can see when they login to the portal. This may include such things as:

- The items that they have on loan including due dates.
- A record of their IT Help requests and the status of those requests
- Electronic Research Guides for their specific courses including suggested websites
- E-Reserve items available for each of their courses
- Databases in general and also databases recommended for their courses
- Electronic journal in general and also journals (both print and electronic) recommended for their courses

If it is available to them they will also see a Document Supply option

2.4 PROFILE OF UNITS

The development of unit-based study tools must involve consultation and negotiation between the Library and relevant academic staff. Coincidentally, such a consultation was initiated during the Library's research guide and portal development phase, when two Human Geography academic staff members approached the Library in relation to developing online support for two second-year units.

The Academics were interested in integrating information literacy skills into their curriculum and wanted a website guiding students in library research and evaluation of information sources. The Academics, unhappy with student reliance on low quality websites, wanted to steer their students towards quality resources, via an online format that would be both attractive and accessible to students. The literature supports the academics observations regarding student behavior.

Students "first-choice web resources are search engines... web portals...and course-specific websites." (OCLC White Paper on the Information Habits of College Students, June 2002, p.3)

To capitalize on this tendency the Library needs to integrate the recommended and relevant information provided by Academic staff into the online environment in a way that users can engage with in a familiar and seamless manner. The development of the portal provided this opportunity by enabling the Library to supply recently redeveloped research guide content as portlets.

The information gathered about the profile and requirements for these units was transferred into the portal in order to provide an example of how to push the unit specific content to the appropriate students. The Library portal combines the Library's need to be integrated into the wider University community with the changing expectations of our primary users.

Creating unit specific content which can be access in a way that users value is imperative in maintaining a viable and relevant web presence for the Library.

2.4.1 UNIT PROFILES IN PRACTICE

When approached by the Academic staff the Reference and Research librarians had already begun reviewing the existing library research guides. The original guides fell into two categories:

- detailed print guides, sometimes accompanying specific unit training
- very brief online guides that consisted mainly of lists of resources with little accompanying explanation, and based on broad subject areas.

Web usability tests revealed that students did not know what these original online guides were for or how to use them. The new and improved guides which formed the basis for new portlet content were called "Study and Research Guides: assignment help and research tips". The research guides also refer students to other library and relevant campus services including online training, citation and style guide support, University's Writing gateway and online librarian for reference questions.

The Academic Outreach Librarians for Environmental and Life Science were able to work closely with the Academic staff to develop two unit specific online research guides. These research pathways also

incorporated lists or links to unit specific print texts and e-books, journals, databases and scholarly websites as specified by the academic. Much of this information had been previously housed on the unit's homepage or within course handouts. The relocation of this information into a library context positioned these links and references adjacent to relevant library tools.

These new guides have also proved popular with other unit conveners requesting similar products and web usage statistics indicate good usage of these guides. This collaboration presented a wonderful opportunity to review the content and direction of all the research guides, not just those adapted for the portal project.

2.5 PROFILE OF USERS

In order to target information to specific user groups, it is imperative to have a method for classifying your users. At Macquarie University Library, we have managed to profile users across the University and most of its affiliations. This information is processed daily and is synchronized with our LDAP server, which forms the basis for authentication and authorization for uPortal.

Within the LDAP server, we have implemented the *eduPerson* schema (<http://www.educause.edu/eduPersonObjectClass/949>), which is designed with higher education in mind and contains commonly used attributes from this sector. When an uPortal user is authenticated against this LDAP server, uPortal interrogates the LDAP server and generates a profile for them based on the attributes in the schema.

The profile contains their username, certificates, authentication information, email addresses, postal addresses and phone numbers as well as which units they are enrolled in, what degree they are enrolled in and what kind of affiliation they have with the University (For example: postgraduate by research, undergraduate, general staff, contract staff academic staff). Given this level of granularity for a user we are able to selectively target their information requirements

The portal framework and the ability to have a users profile offers us an opportunity to tailor the services to the currently logged in student. An example would be our electronic reserve portlet. Instead of a student going to a generic electronic reserve web page, and then performing four separate searches for his material for each of his four subjects, a portal service can provide a much friendlier user interface which can perform that function for him and present the result without him having to do anything.

2.6 ISSUES AND PROBLEMS

Throughout this project various issues have surfaced, some of which have impacted on the development time and completion dates for the Library portal.

Coordinating development with the University portal means that external timelines must also be considered. For example, a test of the University portal in October required the provision of some portlets from the Library. The timing of the Library portal development has consequently been amended to fit in with the University portal.

It can be difficult to keep all staff engaged with the process, particularly those with other commitments or teaching loads. It has required intensive consultation to create and design both the profiles of units and the profile of users. The initial enthusiasm of creating a product is often hard to sustain.

Additionally, the existing process used to determine unit code requirements and to create portlet content for unit codes is time consuming. The workloads involved for the Library's staff may mean that the process needs to be reviewed and streamlined in the future

Ownership is the key issue in determining consultative buy-in by all staff involved. Programmers, Academics and Librarians are continually involved with new challenges and sustaining an establish project can be difficult. The Librarians find that keeping other participants engaged is a central part of their commitment to the Library portal project. Housing the content away from the unit conveners

seemingly puts the initial responsibility of content update upon the Library. However this also results in a continued relationship between library and faculty and also ensures that information literacy course-content remains current.

The Library is currently undergoing a process of organisational change. This change may impact on the sponsorship of the portal, the development of additional staff skills and the time of those with the technical expertise to develop the portal further.

3 CONCLUSION

The portlet framework adopted so far by Macquarie University Library is a complete technical solution for both the problem of information delivery and the problem of information management. Having detailed profiles of our users and being able to target content for them makes the web-based delivery of information much more focused.

However it is only through collaboration that the Library can determine what information needs to be delivered and managed. A relevant and usable web presence for libraries must be developed in a collaborative and consultative way to be as effective as possible.

This does not necessarily remove the need for a more conventional website, rather it can be used in conjunction with existing websites to enhance both the Library's web presence and the web-based delivery of services and resources.

The Library website is not necessarily obsolete but in order to continue to meet the needs and values of our users each library must incorporate and adapt to new technologies and new delivery priorities.

By renovating the existing structure of the website and furnishing it with improved content, based on collaborative processes, the Library's web presence is better able to provide for the needs and expectations of all users.

4 REFERENCES

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