

INTERACT INTEGRATE IMPACT

Proceedings of the 20th Annual Conference
of the Australasian Society for Computers in
Learning in Tertiary Education (ASCILITE)

Adelaide, Australia
7–10 December 2003

Editors

Geoffrey Crisp, Di Thiele, Ingrid Scholten, Sandra Barker, Judi Baron

Citations of works should have the following format:

Author, A. & Writer B. (2003). Paper title: What it's called. In G.Crisp, D.Thiele, I.Scholten, S.Barker and J.Baron (Eds), *Interact, Integrate, Impact: Proceedings of the 20th Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education*. Adelaide, 7-10 December 2003.

ISBN CDROM 0-9751702-1-X WEB 0-9751702-2-8



Published by ASCILITE www.ascilite.org.au

EXTENT AND NATURE OF PORTALLING IN AUSTRALIAN UNIVERSITY WEBSITES

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Abstract

An August 2003 survey of Australian universities websites demonstrates that almost one third have converted their institutional website to portal. The trend towards portals is an incremental shift occurring in most Australian universities. It reflects the shift in HE philosophy fuelled by the post-Dawkins trend towards a VET sector model of demand led education replacing the traditional HE supply model. Like that shift, it has met with some resistance. This paper identifies the major challenges to portalling

It attempts to deconstruct the shift from static website to a portal, throwing light on patterns in structural and navigational approaches to portalling in Australian university websites.

The paper touches on management issues underlying and surrounding the shift to portal, amongst other challenges commonly faced by universities developing institutional portals.

The study described in this paper is a work in progress, data having been gathered from observation at the unauthenticated level. The author plans to follow up with a formal approach to all Australian universities towards a fuller investigation of portal implementation, using the five measures identified in this paper.

Initial data is available online at http://www.jcu.edu.au/office/tld/td/bbsub/projects/PORTALPROJECT/AAH_PORTALS_MATRIX_6.pdf

Keywords

Portal, portal terminology, portal management, website development, Australian universities, stakeholder needs in portal design, portal function, organisational implementation of portal

Introduction

Several challenges face universities implementing a portal. Because definitions relating to the concept *portal* vary, and it is difficult to proceed without a shared understanding, the paper attempts first to clarify terminology.

Second, considerable website restructure is required in the shift from a static website to a portal, so much so that it can paralyse portal development. This paper attempts to deconstruct that shift, throwing light on patterns in the diversity of structural and navigational approaches to portalling in Australian university websites.

Third, a portal requires that many disparate needs and views need to be housed under one 'roof', yet rarely do all players agree on the overall architecture. How does a university proceed to 'portal' when aspects of the outcome are undoubtedly contentious, and implementation could be perceived to cross

boundaries of academic and personal freedoms? This paper touches on management issues underlying and surrounding the shift to portal.

The paper concludes by identifying other challenges commonly faced by universities developing institutional portals, with some recommendations.

A terminology in common

Portal vs Home page

A common metaphor helps to make the distinction between a *home page* and a *portal*:

A home page is site or information (supply) driven. Like a department store it has what its manager thinks most shoppers want and need, laid out in (mostly) sensible and accessible places. Everyone can enter it - no one needs a key. It is not a personal space.

A portal is profile based and therefore to some measure user (demand) driven. The information it provides is based on the user's identity keyed in at login. As at your own home, its door opens to your key, it is full of your furnishings, and is set out the way you choose, with the things you need at your fingertips.

Portal products for business and commerce emphasise enterprise concerns of e-commerce, business process and enterprise web content management. (Butler Group, 2001.) Portal studies in Higher Education emphasise academic concerns of access to information resources and services (Pearce, Carpenter & Martin, 2003). Regardless of the language both commerce and HE identify three central functions: *authentication*, *customisation* and *personalisation*. These can be represented in a triangle of functionality from essential to desirable (Figure 1).

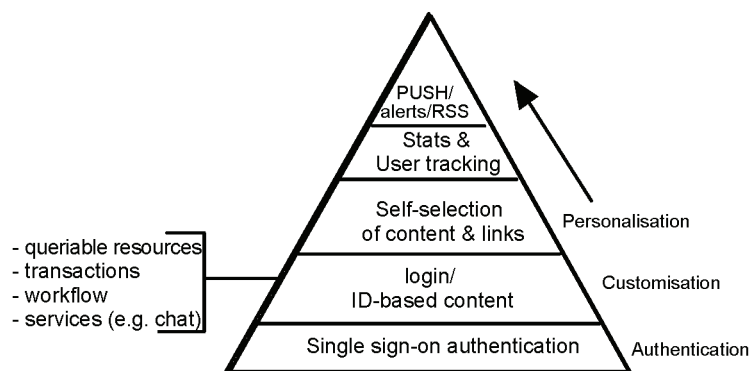


Figure 1 Portal function

Essentially, a portal *authenticates* the user against a central authentication service: second, it reduces information overload by *providing identity based information* to the user: third, it allows the user some *self-selection of content*, fourth, it *tracks* usage and fifth, it *pushes content* and *alerts* the user to what is known, on the basis of usage data, to be of relevance or interest to the user.

JISC (the UK Open Learning Network's Joint Information Systems Committee) in its Information Environment Architecture defines a portal as:

an online service that provides a personalized, single point of access to resources that support the end-user in one or more task (resources discovery, learning, research, buying plane tickets, booking hotel rooms, etc.). (JISC, 2003.)

Ariadne's working definition of portal (Ariadne, 2003) is "a layer which aggregates, integrates, personalizes and presents information, transactions, and applications to the user according to their [sic] role and preferences." Ariadne makes distinctions between *thick* and *thin*, *light* and *heavy* portals, not discussed in this paper.

The following definition has been accepted at JCU: “the topmost entry point to a website, from which each user is offered, on login, information and services which are relevant to that user, and in part user-determined at login.” (A'Herran, 2001)

From the noun *portal* some new terms are derived: *Portalling, portalisation, to portal*.

Gateway

The term gateway has become conflated with portal in usage. In this paper the term refers to the first customised page (welcome) after authentication, leading to the individual's channel or path through information and services.

Channel vs Portlet

These terms are often used interchangeably. WhatIs.com (<http://WhatIs.techtarget.com/>) gives nine definitions of *channel*. The relevant one here is “a preselected Web site that can automatically send updated information for immediate display or viewing on request.”

This description of the pushed feed of modules of information (news, weather) on to the user's web page is without doubt becoming the accepted meaning of the term *channel* and it is beginning to appear, and predominate, in the HE literature. However another term *portlet* exists for web-feed technology, and NetLingo's technology dictionary (<http://www.netlingo.com>) distinguishes between the two, giving *channel* a slightly broader meaning:

an area on a Web site that contains information or content on a specific topic (mimicking the way television has sports channels and news channels, for example).

If we accept the term portal to mean door, with the precise meaning of entry point, there is a need for a term which describes the path, uniquely tailored for each user, that results from the aggregation of push and pull technologies, and the user's ongoing passage. In this paper, the term channel is used to denote that path.

The term portlet is used in this paper to refer to modules of web-feed that are pushed on to an individual's gateway or into the individual's channel.

Intranet

Intranet, a term with a longer history, refers in this paper to a *channel for authenticated users*. This is consistent with its widely accepted meaning.

Customisation vs personalisation

In this paper customisation refers to institution-imposed modification and personalisation refers to user-initiated modification. Some universities, e.g. Monash University, use these terms in reverse.

Developmental stages of portalling in Australian university websites

A study of thirty-eight Australian university websites (A'Herran, 2003) reveals three stages of development towards full portal. One university in three has, using the definition established in this paper, a full institutional portal. All but two of the remainder exhibit some of the features of a developing portal. This paper looks not at the various manifestations of operational portals as have others (Browning, 2003 and Pearce, Carpenter and Martin, 2003) but at stages and recurring patterns of development. The developmental stages are: primary separation of content into differentiated channels for users, provision of role- or subject-based intranets to authenticated users, and the final stage of integration of these under an institutional portal.

Stage 1. Primary separation of institutional content For and About

JISC studies identify three kinds of portal: *audience*, *content* and *format* focussed. (JISC, 2003.) A website that presents its content as its face to the world (i.e. is data-centric) conveys the message that its data is more important than its audience. It looks diagrammatically like Figure 2:

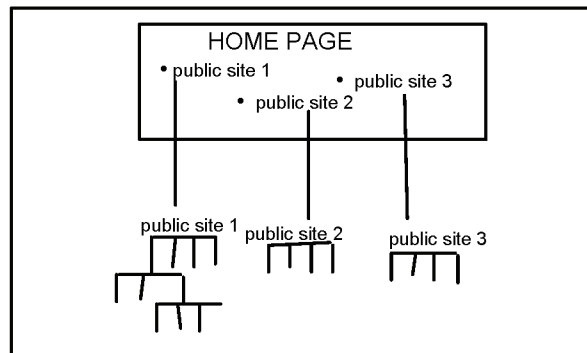


Figure 2 Institutional Website: Content is subject-differentiated and publicly available.

Most Australian university websites acknowledge their audience base, offering information in two broad categories: *For* and *About*, manifesting the first discernible shift from fixed website (*About*) to portal (*For*).

There has been little reflection about these two categories: the fact may be that Information *for* a Researcher is not much different to Information *about* Research: after all a researcher wants to read about research and research-related information. Duplication of links and information is inherent in the *For* and *About* dichotomy.

The distinction is adhered to in 63% of Australian university websites and it remains a useful one, if only because it puts the emphasis on audience, specifically users, rather than content, guiding the viewer’s eye instinctively to the most relevant user group. Separation of content into *For* and *About* can be seen as the first step towards portalling.

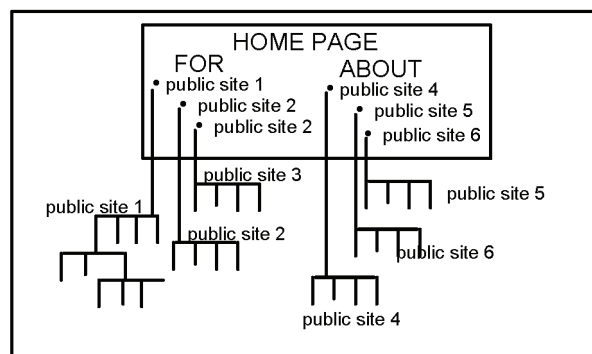


Figure 3 Institutional Website: Content is role-differentiated and publicly available

Differentiated user channels

82% of Australian universities have reached the stage of delivering differentiated information sets to major user groups, some like Edith Cowan University calling what they offer a portal. All universities that have established links for common user groupings offer each user group a page of publicly available information. They provide different information for different users, creating relevant channels of interest for them. Most websites group users in several common categories which are Staff, Current Students and others including Alumni, International Students and Prospective Students. Additional combinations include Alumni with Community, Business and Industry, Partners and Community. 45% of universities target Business or Industry partners and Community, often with the same information. Only 8% of universities target Employers.

Stage 2: Secondary separation of institutional content: Public and Private

The decision to separate public and private content acknowledges that users sit in one of two camps: authenticated and unauthenticated. The separation defines the second stage in the progress towards portalling which is the introduction of authenticated channels or intranets. The only user-based intranets offered in Australian universities are for current staff and current students. The two ways in which Australian universities implement intranets are illustrated in Figures 4 and 5.

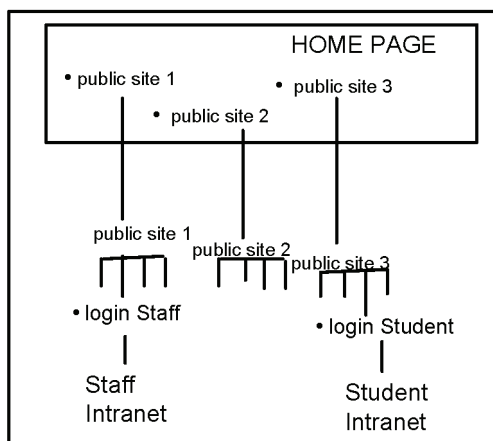


Figure 4 Institutional Website with intranets at 2ND or 3RD level

In 70% of universities the intranet login is offered from a second or later level public information page for staff and students. Authenticated users login at this to access separate silos of role-relevant, system pushed information. An alternative model for developmental Stage 2 is found in in some of these universities where the home page contains a direct login to an intranet, so that authenticated users can login at home page not second or third level as in Figure 5. These without exception lead to student or staff intranets or into LMS.

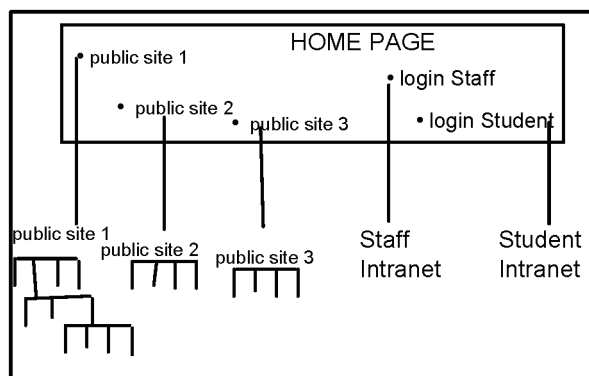


Figure 5 Institutional Website with intranets from home page

Stage 2 is characterised by small shifts towards portalling including intranets for groups such as Alumni, Home page search, the use of LMS as intranet and outreach to prospective students.

Alumni intranet

No alumni intranets are yet offered by Australian universities, although at least one plans to offer an Alumni intranet in 2004. In US universities alumni are regarded, with sponsors, as a useful source of revenue and encouraged with incentives to use their alumni portal.

Search as a pre-portal instrument of personalisation

All Australian university websites but one offer search function on the home page. In advance of portal technology search was perhaps, with 'cookies', one of very few personalisation mechanisms (a 2000 Telecom Glossary defined portal as "loosely synonymous with Web-page search engine"). Like a portal, search harvests a subset of user-relevant information, reducing information overload.

Learning Management Systems (LMS) as intranet

Over 90% of Australian universities offer authenticated access to one or more LMS at second level. Where an LMS is used it is always as a staff/student/guest 'intranet' rather than an institutional portal. No Australian university uses an LMS as an institutional portal.

Prospective Student outreach as intranet

Most universities have a section of their website devoted to listing all that they teach. Some such as University of New England take this further, providing a useful breakdown of what is taught online, separate from face-to-face offerings. Only a few provide a search facility (e.g. the Courses & Degrees site at <http://www.jcu.edu.au/courses/>) by which the same information is provided to all users. Around 80% of universities actively target prospective students by means of a 'Prospective Students' link or a 'Study Options' link. A handful of universities push tailored information about *relevant* study options via a StudyFinder or Coursefinder: a dedicated search mechanism that tailors interactions with the prospective student in a manner more characteristic of an intranet. Returning tailored information to a user, either in a mailed package or in electronic format (e.g. StudyFinder at <http://www.studyfinder.qut.edu.au/>) is characteristic of portalling.

The shift from website to portal is characterised by a number of small shifts exemplified by that from static course list to dynamic, interactive and personalised CourseFinder. It is not until the next stage that portalling begins to manifest, characterised by the first of its five key traits: single, institutional authentication.

Stage 3: Institutional portal

In approximately one-third of Australian universities a single institutional login, usually at home page, leads to profile based information, tailored for different users. Because it is impossible for an unauthenticated viewer to drill into a truly portalled (and therefore secure) environment, the extent to which Australian university institutional portals offer the five key characteristics and functionalities of institutional portals is the subject of later investigation. Figure 6 represents the most common institutional portal structure. Public content is presented for unauthenticated users. Authenticated users login at home page to access their ID-based channel.

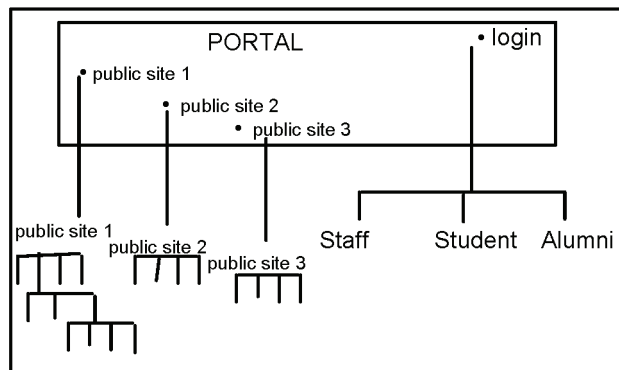


Figure 6 Institutional Portal

Management issues in portal adoption

Why are Australian university websites moving to portal environments?

Key characteristics of a portal such as tracking of users to tailor content, obtaining statistics on user groups, and forced feeds of content from external providers based on statistics and tracked usage are undoubtedly contentious. Why are universities doing it?

Like many early rationales from the HE sector Gilbert in 2000 put user benefits first and institution benefits second. Englert still finds (in Pearce, 2003 p. 13) that efficiency gains and cost savings are 'not

the primary motivator for most universities'. One cited benefit is that by portalling, universities can better design for specific delivery mode e.g. users with PDAs (hand-held 'Personal Digital Assistants') and other wireless (WAP) devices. Another is that mobile users (for example students working variously at home, in a university lab, or at a friend's PC) have much to gain by retaining their own personal web space, bookmarks and links wherever they are.

Elsewhere, economic efficiencies are cited in the HE literature, primarily the reduction of information overload gained by providing a subset of what is relevant to each user. For institutions that bear the costs of portal implementation adequate return on investment is understandably a primary reason for introducing portals. (Butler Report 2001.) It is argued that increased retention results from more responsive provision of information and resources. Directing a subset of relevant resources to specific user groups reduces duplication and licensing costs. 'The increase in visibility offers possibilities ... to radically restructure the ways in which organizations gather, store and divulge information.' (Dolphin, Miller & Sherratt 2003.) Pearce lists cost savings reported in universities in the UK, US and Australia. (Pearce, p. 27.) Spencer (2003) estimates that users save fifteen minutes per week in completing basic administrative tasks, amounting to a large saving to institutions annually. At JCU Blackboard LMS polls targeting specific user groups have proven more effective for gathering data about users and platforms than untargeted web statistics.

A further factor deserves thought: for two decades a demand model of education has been eroding the traditional HE supply model. Portal culture in educational institutions stems from and is in line with educational demand culture. The shift to portals can be seen as inevitable, a part of the national shift in HE philosophy, post-Dawkins, promoting client needs over an institution's capacity to supply. How does a portal promote client needs?

Supply vs Demand portalling: who controls the portal?

Key characteristics of a portal are its potential for profile-based *customisation* and *personalisation*. Customised design anticipates user needs in terms of benefit to the institution. It predicts the corporate-related needs of users and ensures that those options are available. Better portal products offer authorised users the ability to personalise their screens, including appearance and information, editing links to suit personal preferences. The portal's predictive power is based in identity tracking and usage statistics. Portal products aggregate modules (in some cases, pushed portlets) with different themes, topics or messages on the user's gateway.

Who is in charge of these modules: who controls what is contained in each and whether it is present or not on the individual's gateway? A powerful feature of some portal products is delegation of management of portal modules to organisational units. By delegation, locus of control is removed from central IT and distributed among the organisation. Delegating management of sections of the portal to content managers can benefit institutional image and improve distribution of information from content providers. It leads to a more market driven presentation on the university's website. Delegation of portal content that will update dynamically leaves content in the hands of content providers and choice to access it in the hands of users.

Separation of channel content: essential and desirable

Whether content of a portalled website is *essential* or *desirable* determines whether it is *pushed* or *pulled*. Content of channels both corporate (pushed) and personal (pulled) is a matter for a reference group, representative of university, faculties and students, to determine. In a corporate portal corporate needs properly define what is essential and what is not. Items from which the university will gain and items from whose absence the university will lose are essential. This is not to say that corporate needs are in opposition to the needs of internal clients. If internal client needs are not met, university needs are not met, as clients will leave.

Users may choose modules on their gateway that are not essential to the university. Some writers call these items 'sticky': items like sport, book reviews and news. Portals need to strike a balance between

gratuitous stickiness and retaining users by adding teaching and learning value. What appears on the university portal is market driven as items perceived by the user to be of little use, poorly presented or uninteresting will not be chosen on the user's portal. Module managers have to 'sell' their modules to users. This neatly expresses demand-led (market driven) education over educational supply, characteristic of portal culture. For Pearce, "the focus on [portals] is perceived to translate into increased revenue through recruitment and retention and a result of improved customer [sic] service and satisfaction." (Pearce, p 11.) With portals the customer comes first.

Challenges in portal development

Resistance to change

Faced with resistance, changing negative perceptions of the university community is a first step in the adoption of a portalled website. Promoting the advantages while involving stake-holders in the design and seeking user suggestions and advice are imperatives. A related problem is meeting the needs of the many categories of user. This can be met by close consultation with stakeholders at every project stage, and dealt with by fine grained LDAP descriptions of users.

Integration of legacy systems (portals within portals)

An expression coined by Paul Helm of Sheffield-Hallam, 'portal wars,' has been used by some including Browning, (2003) to describe the way in which competing interests develop 'silo-ware' in the one institution resulting in confusion for users and a technical nightmare. At a UK uPortal users workshop at Hull in November 2002 Dolphin, Miller and Sherrat argued that 'any portal that seeks to present itself as the serious contender to be the sticky first port of call for members of an institution [must] be capable of integrating with the campus VLE [LMS] and other monolithic legacy systems, such as the Library system.' They reported that uPortal "aggregates web services but has a problem 'unbundling' VLE functionality - 'competition' between VLE & portal functionality can be a problem". (Dolphin et al, 2003.)

On the positive side Reichler reported to a Blackboard list in 2003 that "integration of Blackboard into our home-grown portal has increased its usage to about two-thirds of faculty and almost all students." Kraan in a CETIS report of U-Portal uptake in the UK (Kraan, 2002) acknowledges difficulties but also encourages us to think that embedding one portal in side another is possible.

Unifying differing directions within the university community is a challenge. For Brewer (2003 p.12) how this is achieved depends on the dominant view of the institution. Building a quality portal that all will willingly use is the solution. A successful portal product must resolve differences in legacy systems and ensure interoperability, with seamless cross application experiences for users, removing the barriers between existing intranets.

Integration of resources

Another challenge is the integration of resources, meeting the need for more integrated search, retrieval and authorised delivery of academic information resources (physical and electronic). Although inward looking in its concern with access to internal content a university portal needs to be outward looking in its goal of cross search and harvesting of external resources and content from external providers. By exploring the use of technologies such as RSS (RDF Site Summary which delivers live web feeds), Z39.50 (for cross database searching) and observing IMS (Instructional Management Systems) and other interoperability specifications, customised and personalised presentation of information, services and resources to users can be achieved.

Gaining Strategic Commitment

'A portal cannot be turned off, once it is begun.' (Looney, 2000.) A portal is a recurring budget commitment. Strategic commitment is a priority from outset to ensure its ongoing funding as a corporate system.

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