

**Web-based Industry Partner Portals to University Workplace Learning
Programs: Implementation and Design Issues**

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(2008). In Luca, Joseph and Weippl, Edgar, Eds. *Proceedings EDMEDIA: World Conference of Educational Multimedia, Hypermedia, and Telecommunications*, pages pp.998-1003, Vienna, Austria.

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Abstract: With increasing emphasis from universities on workplace learning programs in which students undertake industry placements as part of their degrees, there is a need for disciplines without a tradition of workplace learning to engage with potential industry partners. A key way to address this need is for universities to design web-based portals through which industry partners can engage with these programs. To build industry-university partnerships successfully, industry portals must: be easy for industry partners to find online, and facilitate efficient communication between industry partners and university workplace learning staff and students. Integration with university web systems and governance frameworks can lead to delays in the launch of a web-based industry partner portal. This paper focuses on the early stages of the design and implementation of Queensland University of Technology's Creative Industries Industry Portal as a case study of a new development in web-based university-industry engagement.

Context

Work-integrated learning involving student placements in industry is not a new pedagogical development. However, as tertiary costs and calls for higher education to address the skills agenda increase, graduate employability and graduate employment are increasingly important foci for universities and students internationally. In line with international trends, Australian universities now place workplace learning high on their agendas. In a recent survey of work-integrated learning policies and strategies at 15 Australian universities, 70% of respondents indicated that work-integrated learning rated between 7 and 10 on a 10-point scale in terms of high-level strategic planning at their institutions (Patrick 2006). In the face of increasing demand for universities to deliver effective workplace learning programs, universities face significant challenges. In an increasingly competitive market, universities must forge enduring and positive relationships with their workplace learning industry partners, and must develop innovative placement initiatives, if they hope to sustain and extend their programs into the future (Smith & Betts 2000).

Workplace learning programs face unique challenges in the Creative Industries. The term 'Creative Industries' is shorthand for the content, cultural and design industries, which include advertising, design, fashion, audiovisual media, broadcast media, interactive media, publishing and music. Workplace learning in the Creative Industries (CI) must be flexible enough to accommodate nearly as many industry partners as there are individual students. CI workplace learning programs must build partnerships in a culture in which workplace learning is not traditional. "Engaging effectively with employers" is identified as one of the top five challenges for workplace learning identified by the UK's Higher Education Academy (Nixon, Smith, Stafford, & Camm 2006, p. 4); while "poor customer service"—the customers in this case being industry partners—is a key barrier to building successful workplace learning programs (Nixon et al. 2006, p. 50). Using web technology to build connections among industry partners, university stakeholders, and students is one response to this service problem. The key research question addressed here is: *how can universities—specifically Creative Industries programs—leverage web-based technology affordances to forge, build, and maintain effective workplace learning relationships with new and ongoing industry partners?*

This paper addresses the area of designing for industry partner relationships using web-based technologies to enhance the partnership. In particular, this paper focuses on designing and implementing online industry portals, or virtual front doors (Jensen, Christie, & Baron 1997), through which industry partners can engage with CI workplace learning programs. An online portal is, at its most basic, a page on the faculty's website which houses information for potential and ongoing industry partners about the workplace learning program. However, beyond this bare minimum, an online portal "is a web site that provides entry into a comprehensive and well-organized collection of content, tools, and value added services" (Kinslow, Newcombe, Goss, Welsh, & Camm 2002), and which facilitates effective communication between partners. At a more advanced level, a portal provides industry partners with an active interface with the program, through which they can enter position descriptions, questions and feedback about

the program, and can access information about available students and their qualifications. This paper describes the first phase of the design and implementation of a portal for the CI workplace learning program at the Queensland University of Technology (QUT) which attempts to stimulate and support university-industry partnerships. It begins with a description of the design themes, derived from analysis of barriers to communication faced by industry partners, which guided the project, followed by a description of the project evolution from design to implementation. In the first phase, research carried out in collaboration with industry partners emphasized the value of a portal, however, issues relating to integration of the portal with other university web-based systems and the university's web governance policies caused unexpected delays in implementation. Finally, the paper outlines the specific lessons learned from this project as generic issues to consider when undertaking the design and implementation of web-based industry portals to university workplace learning programs.

Design and Implementation Issues and Solutions in Phases 1 and 2

In response to the need to build its workplace learning program, in early 2007 QUT's CI Faculty initiated the development of an online industry portal. Phase 1 of the project, involving design and coding of the QUT Creative Industries Industry Partner Portal, has taken place over 12 months. Employing a design-based research approach (Herrington, McKenney, Reeves, & Oliver 2007), the researchers conducted formative evaluations of Phase 1 of the design solution, the results of which informed subsequent enhancements of the design. Phase 1 is complete at the time of writing; three phases remain. Phase 2 of the project must take place before the Portal is launched: this involves systems integration of the Portal with Blackboard and the University's third-party job-posting and employment service, and web governance clearance at the university level. This phase has been more complex than anticipated, and is still in progress. Once the Portal is launched, the third phase of the project, involving a comprehensive evaluation program, will gather feedback from Portal users, including industry partners and academics involved with the workplace learning program. In each iteration, the results of evaluations will be used to further refine the Portal. The final phase will focus on the impact of the project at an institutional level, and maintenance issues involved in sustaining the program. This section identifies key design issues related to Phase 1 followed by a summary of Phase 1 and Phase 2 experiences.

Phase 1: Environmental Scan and Analysis of Generic Design Issues and Problems by Researchers and End Users in Collaboration

Designing a Portal requires a thorough understanding of the needs of its users, and of the program it is designed to support (Nickles 2007; Zazelenchuk & Boling), as well as an understanding of good-practice exemplars. To begin the design process for the Industry Portal for the QUT CI Faculty's workplace learning program, an environmental scan was conducted to survey similar Australian faculties' online industry portals. To ensure that the design solution addressed stakeholder needs appropriately, existing CI Faculty workplace learning industry partners examined the websites of all 39 Australian universities and their CI disciplines (most Australian Creative Industries disciplines are housed in faculties of Arts, Communication, or Fine Arts) to find information about their workplace learning programs. Industry partners were used for this scan in order to gain industry perspectives into university online interfaces. The industry partners found a workplace learning industry partners' portal on eight out of 39 universities' home pages; two CI-specific portals were found. This research identified a need for Australian universities and their CI faculties and disciplines to provide effective industry partner portals. More links were found when the same analysis was conducted by the researchers, indicating that some existing university industry portals are easier for academics to navigate than they are for their intended industry partner end users. A comparison of the industry partners' scan with the researchers' scans pinpointed specific disjunctures between academics' and industry partners' understandings of the sites. Disjunctures related to language: the industry partners did not recognize terms such as "Industry Affiliates Program," or "Student Careers and Employment" as links to workplace learning programs. This problem may also relate to the lack of a common nomenclature in the higher education sector for work-integrated learning programs (Atkinson, Rizzetti, & Smith 2005). This finding indicates the importance of adopting clear and consistent nomenclature for workplace learning industry portals.

To inform the usability design, the researchers analyzed the affordances of available technologies that would enable industry partners to easily engage with the Portal information and tools. Research into the generic architecture and interface design of the portals uncovered in the environmental scan, as well as into case studies cited in the

literature (Pauling & Komisarczuk 2007), indicated that many workplace learning programs consist of an intranet workplace learning site using Blackboard or other learning management system (LMS) software for students and workplace learning staff, a web-based portal for industry partners, and a third-party job posting and position-application application which links the internal and external sites (Pauling & Komisarczuk 2007).

For these reasons, design decisions were made to house the QUT CI Industry Partner Portal on the Faculty’s web-based corporate homepage, with all program information readily available to potential and existing industry partners. The final platform architecture decision for the QUT Portal comprised Blackboard, a web-based portal, and third-party job-posting and employment software (Fig. 1). Affordances of Blackboard for enrolled students include efficient access to program information and assignment submission. However, the LMS authentication process does not readily support external access from multiple industry partners. A web portal linked to the Faculty’s site addresses this need and affords opportunities for industry partners to seek information about the workplace learning program. Hosting the Portal on the Faculty’s home page brings with it the added benefits of a URL which is easy for industry partners to remember. Moreover, industry partners could use search engines to find the Portal, which would not be possible if the Portal existed behind university firewalls. The Portal link will be clearly named “Industry Portal for Creative Industries Workplace Learning” so that industry partners can locate it easily on the homepage. The Industry Portal will link to the existing QUT Careers and Employment jobs-posting and employment site through which industry partners can enter placement position descriptions. This single sign-on site will allow CI workplace learning academic staff to access and approve placement descriptions. A link on the workplace learning Blackboard site will allow enrolled students access to the approved workplace learning placement positions listed on the Careers and Employment site. A third-party job-posting and employment application linked to the Portal is efficient in terms of time and development that workplace learning program designers will save in building a dynamic interface and database to collect and make available placement position descriptions.

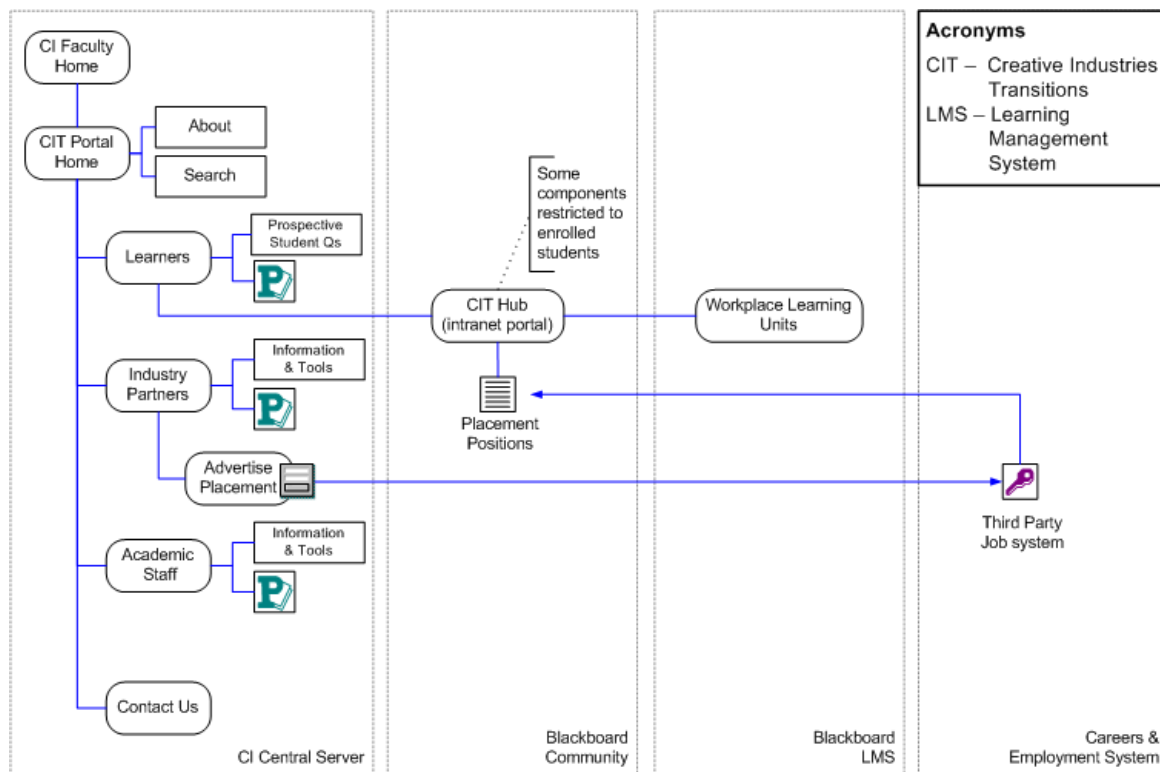


Figure 1. Creative Industries Workplace Learning Industry Partners Portal: Integration of Institutional Systems [1]

Phase 2: Integration Issues and Solutions

The design plan to connect the three systems—Blackboard, Careers and Employment’s job-posting and employment site, and the Faculty’s corporate home page—is logical, but faced various implementation and interoperability issues. The project’s original plan was to locate the Portal on the LMS used by QUT, Blackboard. Three issues prevented the implementation of this plan. First, Blackboard access is password protected: industry partners who wanted to seek even basic information about the workplace learning program would be forced to apply to the university for a password, then wait for the password to be emailed to them, and then return to the site to log in. Feedback gathered from existing industry partners indicated that this process would act as a deterrent to engagement with the workplace learning program. Further, the university’s IT security policy dictates that passwords must be changed every 60 days; this would represent an additional inconvenience and deterrence to industry partners. A second issue related to Blackboard is that it is specifically designed for use by students and academic staff: its layout and architecture are not intuitive for industry partners. This presents an obstacle to the Portal’s aims of facilitating effective communication between industry partners and the workplace learning program, and of attracting industry partners to the program. Similarly, it is not possible to customize the left-hand menu options on Blackboard so that they are more usable and comprehensible to ongoing and potential workplace learning industry partners. While some customization may be technically possible, it cannot be implemented by workplace learning staff, presenting ongoing maintenance issues. This problem is not unique to this project, but is one faced by many innovative university web-based educational projects (Severance, Hardin, & Whyte 2008; A’Herran 2003). For these reasons, it was decided to “escape the bonds of a single Virtual Learning Environment product” (Severance et al. 2008, p. 47) and to locate the Portal on the Faculty’s corporate home page rather than on Blackboard.

The location of the Portal on the Faculty’s home page also faced an implementation issue: alignment with the university’s web governance frameworks, for example the look, feel, and language of the Faculty’s site. The intended colour of the Portal had to be changed in order to align with the Faculty site’s colour scheme. Similarly, the look and location of the hypertext links on the Portal had to be redesigned so that they aligned with those on other pages on the Faculty’s site. Negotiations with the Faculty’s marketing staff were undertaken in order to discuss the language used on the Portal. The research with industry partners indicated that universities’ language is not always easily understood by industry partners; at the same time the language used on the Portal needed to align with the language used on the rest of the Faculty’s site. The current QUT CI Faculty home page features hyperlinks titled “Current Partners” and “Industry Collaboration”; negotiation was required in order to determine whether a third hyperlink titled “Industry Portal for Creative Industries Workplace Learning” would cause confusion and usability problems. Finally, locating the Portal on the university’s corporate server means that the Portal has to comply with the university’s web governance restrictions relating to language, corporate branding, look and feel, and metadata keywords. Complying with these frameworks is not necessarily difficult, but it did entail substantial delays to the launch of the Portal. It also entailed a revision of aspects of the Portal’s design and content. At the time of writing, final authorization for the Portal from the Faculty has not yet been obtained.

Using a third-party system through which industry partners can enter placement position descriptions and through which students can access these means that workplace learning staff do not have to invest the resources in developing such a system themselves. However, integrating with an existing third-party job-posting and employment system is not straightforward. The decision to use QUT’s Careers and Employment’s web-based employment system entailed negotiations with Careers and Employment staff regarding customization of the Careers and Employment system to suit the needs of the CI workplace learning program, as well as those of its ongoing and potential industry partners. Specifically, because the system is university-wide, a clear link for CI workplace learning industry partners was required on the Careers and Employment interface. The interface uses pull-down menus through which industry partner users must scroll to find the type of employment they wish to offer. CI workplace learning partners who wish to list a placement position will have to scroll through the menu which lists every discipline offered by the university in order to locate the specific menu item titled “Creative Industries workplace learning.” Confusion may result, for example, for advertising industry partners who will be presented with the option of selecting either “Advertising” or “Creative Industries workplace learning” from the menu. This conflicts somewhat with a portal’s function of facilitating efficient communication between partners and as such fails to assist in the successful growth of the workplace learning program. Another issue which has yet to be resolved is that the existing Careers and Employment system automatically makes all positions entered by industry partners available to all QUT staff and students. However, the CI workplace learning program guarantees its industry partners that the program is restricted to upper-level students who have completed required preparation

tasks. A programmer will have to be employed to write a script which will restrict access to placement position descriptions entered by CI workplace learning industry partners to enrolled CI workplace learning students only, entailing further delays to the launch of the Portal.

Phase 1 and 2 Outcomes and Next Steps in Institutional Integration

At the time of writing, Phase 1 of the Portal's development is complete. The Portal has been designed and developed as detailed in this paper. Lengthy and substantial discussions with the managers of the relevant systems—the Faculty's Blackboard coordinator; the Faculty's Marketing officer, who is in charge of all material on the Faculty's homepage; and QUT's Careers and Employment service—have concluded, with all in agreement about how the Portal will integrate these systems. Negotiations have also involved ensuring that the Portal complies with the governance frameworks of each of these systems. Actual implementation, however, has been delayed by issues related to the interoperability and integration of these systems, for example, integrating the LMS with the third-party employment system.

Next steps for the development of the Portal include:

- Phase 2: Systems integration of Blackboard, external faculty homepage, QUT Careers and Employment job-posting and employment site, and web governance policies at the institutional level
- Phase 3: Comprehensive evaluative program with data from industry partners, students, and academic staff involved with the workplace learning program
- Phase 4: Implementation of changes to Portal design and functionality based on Phase 3 evaluation data, and identification of maintenance issues involved in sustaining the program

Once Phase 2 of the development project is complete and the Portal is publicly available, QUT's CI Faculty will become one of the few Australian universities to have a CI workplace learning industry partner portal available on its homepage. Once Phases 3 and 4 are complete, and the Portal is evaluated and modified, an important step will have been taken in building and developing university-industry workplace learning relationships in the CI sector.

Lessons for Industry Partner Portal Design and Implementation

A key lesson learned from the completion of Phase 1 and from the ongoing work involved in Phase 2 of the project is that systems integration is more time consuming than envisaged. Design and coding of the Portal involved research with industry partners and of the literature. Once design was complete, lengthy negotiations with systems managers was required. The look and language of the Portal had to be adapted so as to comply with the Faculty's homepage framework, and permission had to be obtained from the Faculty to add the Portal to the homepage. Negotiations with Careers and Employment regarding the articulation of the job-posting site into the Portal involved discussions of how the Careers and Employment site would have to be modified to accommodate CI workplace-learning placement position descriptions, how access to the Careers and Employment back-end database would be organized for relevant CI workplace learning academic and administrative staff, and how the Blackboard site could link to the placement position descriptions housed in the Careers and Employment database. Negotiations with Blackboard managers involved attempts to facilitate single sign-on access for industry partners, and access to the Faculty's Community Blackboard site through which new placement positions available can be promoted to students. These negotiations reflect A'Herran's finding that "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" (2003, p. 24). The experiences encountered in implementing the QUT CI Portal demonstrate that this resolution can be complex and time-consuming.

The implementation issues faced in this project will be generic obstacles to the development of any innovative new university-industry web-based communication strategy. It is crucial for portal designers to consider them as key parts of their design and implementation strategies. Phase 1 findings indicate that academic portal designers often fail to take into account their industry partner end users. No matter how sophisticated the portal might be, if the industry partner cannot find it, access it easily, or understand it, it has failed in its core function (Zazelenchuk &

Bolen 2003). Phase 2 findings demonstrate that systems integration and interoperability issues can add substantial time and effort to the implementation of an effective workplace learning industry partner portal.

[1] "CI Transitions" is shorthand for "QUT CI Transitions to New Professional Environments Program," the formal title for the suite of workplace learning courses offered by QUT's CI Faculty:

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