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Changing horses in mid-stream: a new LMS plus improved teaching

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Keywords

elearning, strategic plan, technological change, LMS, Vista, higher education

Disciplines

Arts and Humanities | Social and Behavioral Sciences

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The University of Wollongong's recent implementation of a new Learning Management System has been accompanied by a two year process of interviews and consultation with committees, deans, managers, academics, students and support staff. This has resulted in a Strategic Plan for eLearning & eTeaching and an eTeaching Business Plan. These plans for institutional change were based on earlier studies of IT introduction in Higher Education contexts.

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Overview

After a broad consultation and evaluation of Learning Management Systems (LMS) in 2004, the University of Wollongong [HREF2] decided to replace WebCT Campus Edition (CE, used since 1999) with WebCT Vista [HREF3]. This change was one of 22 elements of the University's Business Plan for eLearning and eTeaching, based on an equivalent Strategic Plan.

Yetton et al [HREF4] proposed that successful implemention of technological change in Higher Education requires a multi-factorial approach. Analysis of the University of Wollongong's 22 actions demonstrates that whilst setting the strategy and structure is essential, the majority of actions are in the two areas of management processes, and roles and skills.

In 2004 over 800 subject websites were in use each year. The new software and dedicated hardware were installed in the second half of 2005 and systems and procedures tested in our Summer teaching session (12/05 to 2/06). During Spring 2005 the 400 subject sites to be used in the first half of 2006 were migrated to Vista and quality assured.

The teams that normally operated the system were expanded for the period May 05 to December 06 to deal with the enormous changes involved. Schedules for subject migration were designed and staffed, communications and training materials were purchased or developed, staff were helped to understand the new system through small-group, large-group and 1-1 sessions.

The largely-successful pilot in Summer led to full implementation in February 2006, though we are as yet far from the state of automation we had achieved in Campus Edition.

Strategic planning

Although all Australian universities have University strategic plans and IT strategic plans, it is estimated that fewer than 20% have a separate plan for eLearning and eTeaching (Inglis, 2006). The University of Wollongong's recent technology ramp-up has resulted from strategy development accompanied by a two year process of interviews and consultation with committees, deans, managers, academics, students and support staff to:

- more clearly articulate, from the educational and strategic perspectives, why we use eLearning;
- understand better how eLearning should be supported in a blended environment;
- inform decision-making about priorities for funding and support.

This has resulted in a Strategic Plan for eLearning & eTeaching and an eTeaching Business Plan. The

Business Plan contains 22 actions to accompany the implementation of the LMS. Using a revision of the MIT90s framework (Scott Morton, 1991) for IT strategic planning, the 22 actions are categorized (Table 1) by the framework's five key factors:

- Strategy
- Structure
- Management processes
- Roles & skills
- Technology.

The revised framework was developed as part of an Australian national research project titled Managing the Introduction of Technology in the Delivery & Administration of Higher Education (Yetton et al, 1997) [HREF4]. Yetton proposes that it is never a matter of merely implementing technology nor a matter of merely stating in a Strategic Plan that technology is important; all five factors must be addressed.
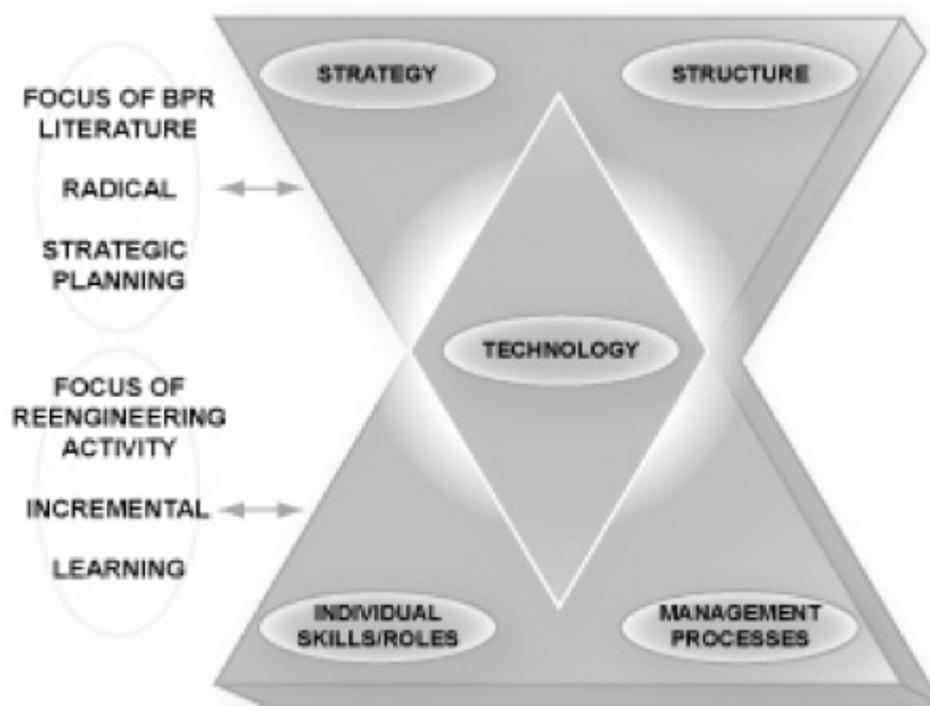
Figure 1: Integrated Top-Down and Bottom-Up Management of IT-based Change

"The strategic change and business process reengineering (BPR) literature typically focus on the top triangle, comprising strategy, technology and structure, as the major strategic gains, taking essentially a top-down approach… At the same time, issues about managing change… ie in the bottom triangle… However, because most of the practitioners come to the table with a mind-set of 'step one, design the top triangle; step two, implement the bottom triangle,' the difficulties that arise in relation to the bottom triangle are seen as implementation problems which occur after the event, and therefore as a nuisance factor rather than being central to the process." (Yetton et al, p.128)

The University of Wollongong's eTeaching Business Plan contains 22 strategic actions to accompany the implementation of the LMS. The actions are presented as Discussion Papers so that the Business Plan is a living, dynamic document in a rapidly evolving environment. The actions outlined in the plan are reported against twice a year in various university Education and IT committees. The 22 actions are derived from interviews and consultations with committees, deans, managers, academics and support staff. Although a number are only relevant to the University of Wollongong context and may not be able to be generalized to other universities, they are reproduced in Table 1 and categorized according to the five factors in the Yetton report.

Table 1 clearly demonstrates the validity of the Yetton framework. It reinforces that technology itself

is a small part of the implementation process; the majority of actions are in the Management Processes category rather than the Technology category.

Structure	Strategy	Technology	Management	Roles/Skills
Establish eTeaching Committees	Strengthen focus on Learning Designs	Select new Learning Management System	Reformulate Service Agreement between CEDIR & Faculties	Increase staff development opportunities
Integrate eTeaching administration, Learning Design unit & media production unit	Analyse, articulate & support Multi Location Teaching	Underpin with Content Management System	Coordinate a whole of CEDIR approach to client contact & client tracking	Increase and vary student support options
	Design new Spaces for eTeaching & eLearning	Review subject & course database	Revise intellectual property statute	Increase use of courseware for staff training
	Create a brand image for eLearning & eTeaching	Integrate emerging technologies	Improve quality assurance of sites	
		Evaluate & implement ePorfolio system	Review Teacher Survey	
			Revisit responsibilities for system administration, site administration, student support & staff support	
			Facilitate evaluation & purchase of published courseware	
			Evaluate & benchmark	

Table 1: 22 eTeaching Strategic Actions Categorized by the Yetton Framework

Philip Agre [HREF5] discussed the conceptual complexity of the infrastructure, applications and service layers in networked universities, suggesting that "information infrastructure is easy to get wrong, given that nobody is likely to possess an adequate substantive model of the activities that the infrastructure is supposed to support. And an infrastructure that gets such things wrong can foreclose the possibilities that it was supposed to open up." While UOW attempted such modelling in 1999, the rapidity of reorganisations in response to the changing regulatory, educational and research environment makes static models difficult to maintain. Sharing the understanding of current players is crucial to good decision-making.

At UOW where the central services that impact on the provision of eLearning (IT Services, Registrars Division, Library, Academic Development, eTeaching Support, Learning Design, Materials Production, Teaching Spaces Support) all belong to different divisions with different reporting lines, and nine different Faculties "own" the teaching and teaching materials, it was important to develop a committee structure that would sit outside existing university divisions in order to bring together the views and expertise of all these groups in the new enterprise of mainstreaming eLearning.
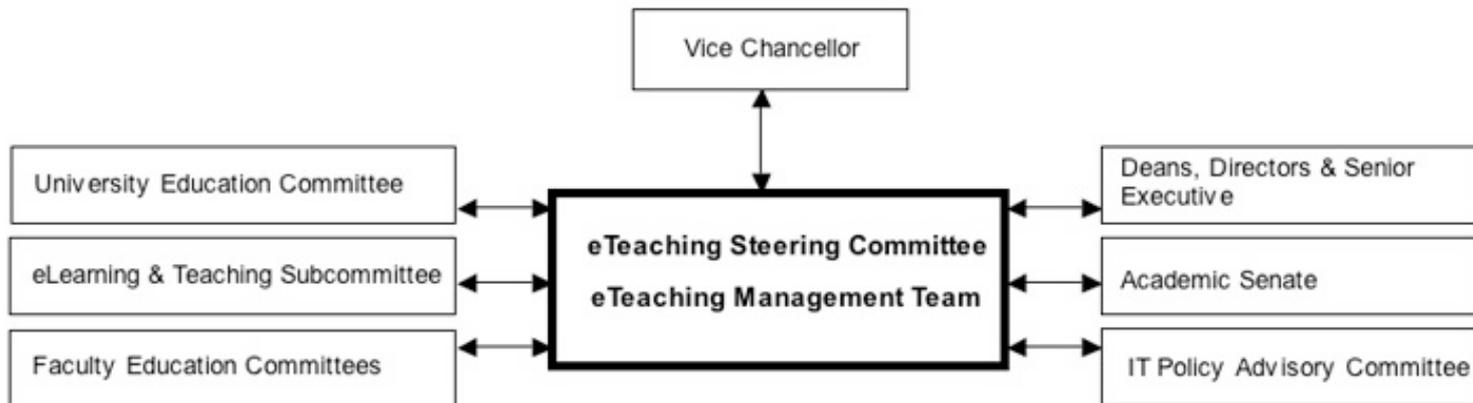
Figure 2: Vice Chancellor's eTeaching Steering Committee

The Project Sponsor, the Deputy Vice Chancellor (Academic), chairs the eTeaching Steering Committee, reporting directly to the Vice Chancellor. The Project Leader is the Director of CEDIR, the central unit responsible for Academic Development, eTeaching Support, Learning Design, Materials Production, and Teaching Spaces Support. The committee membership includes Deans and Course Coordinators and receives input from the University Education Committees and IT Policy Advisory Committees. Therefore the eLearning implementation is seen to have strong roots in the academic side of the University. The thinking and negotiation about the structure of this committee, and its sub-committees, took many months but it is important not to under-estimate the value of this stage. For more extensive discussion of the strategy-development process see Wills 2006.

Preparing for Implementation
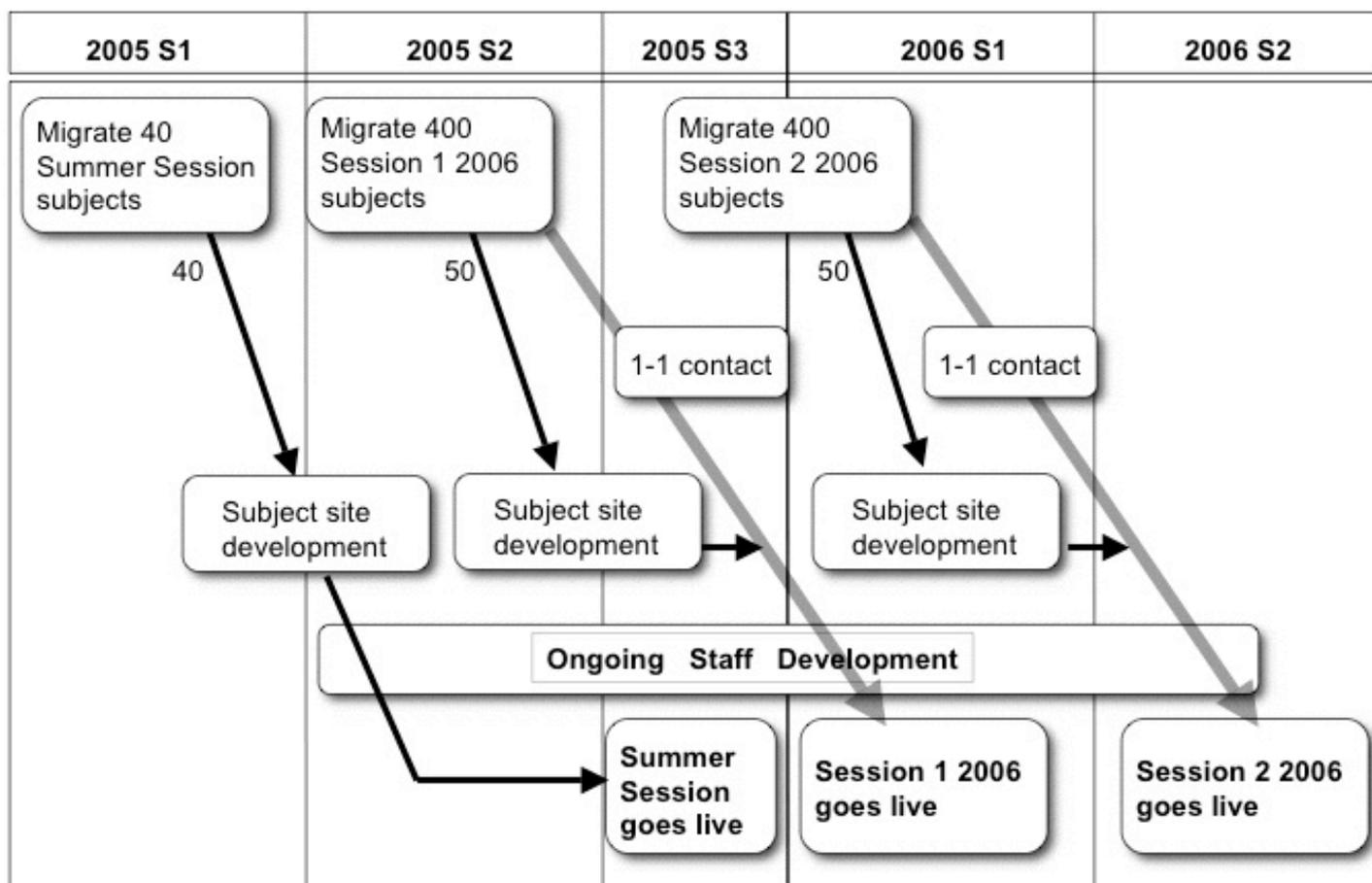
Fig 3: Implementation Overview

Migration of sites

As shown in Fig 3, over 800 sites needed to be migrated from the old system to the new. We expected (wrongly) that few staff would prefer to start with a clean site, so converted all previous S1 sites to Vista. The existing eTeaching Support group of 2 persons was expanded to 4 and were also able to engage casual staff as required to deal with peak loads. They were responsible for transferring sites using the tools supplied by WebCT, and also for manually transferring site components when the tool failed to deal adequately with the complexities of sites.

After migration the Support group technically assured every site to ensure that all links worked, all documents were in place, quiz questions behaved correctly, etc.

Staff Development and Training

Open sessions were conducted from mid-2005 to inform staff of the changes that would be occurring, to introduce them to the new LMS, and to answer questions such as:

- What will happen to my current site/s?
- What advantages does Vista give me?
- What will I have to do?

Questions asked and answered during these sessions were collected into an FAQ site [HREF6] which was updated during the project. Later there were Faculty-specific information sessions held in their own regions of campus.

The Staff Development program was designed to address the needs both for skills training and pedagogical development in the UOW-specific environment. To speed the development of training materials, we purchased materials from the University of Tasmania [HREF7], who had been using Vista for several years. While these relieved us of much of the authoring burden, there was a significant localisation effort required; the UOW focus on blended learning was provided by the UOW staff delivering the sessions.

We offered broad and specific face-to-face training starting from September 2005, together with Self-Directed Online Modules from February 2006. Single-topic small-group face-to-face sessions were conducted in specific Faculties as requested following the information sessions.

As expected, these efforts did not reach a significant fraction of staff users, so hand-holding closer to the teaching session was an important part of our strategy. We contacted all teachers individually and offered a short 1-1 session in their office with a Learning Designer working on their new Vista site.

These individual sessions were generally 1/2 to 1 hour, and included

- showing staff how to access and use their site
- introducing the new elements in their sites
- dealing with computer system issues
- minimal restructuring of sites to aid comprehension and navigation
- explaining changes in file storage in Vista
- highlighting some Vista advantages and
- explaining contact mechanisms for further support.

This 1-1 contact also provided the opportunity to engage staff in discussion about potential future enhancements of their teaching. It was a crucial element in ensuring that teachers did not feel disconnected from the process of change.

Communication

As well as announcement emails to all staff at significant milestones, a website was established to explain the transition process to staff [HREF8]. This site carried copies of all announcements, details of the training planned, links to the presentations used in the open sessions, contact details for staff, etc.

eTeaching Services in CEDIR who were responsible for migration also provide a call-centre facility for staff, with extended hours during 2006, responding to requests for explanations and passing on requests as appropriate to the Learning Design Unit (Fig 4).
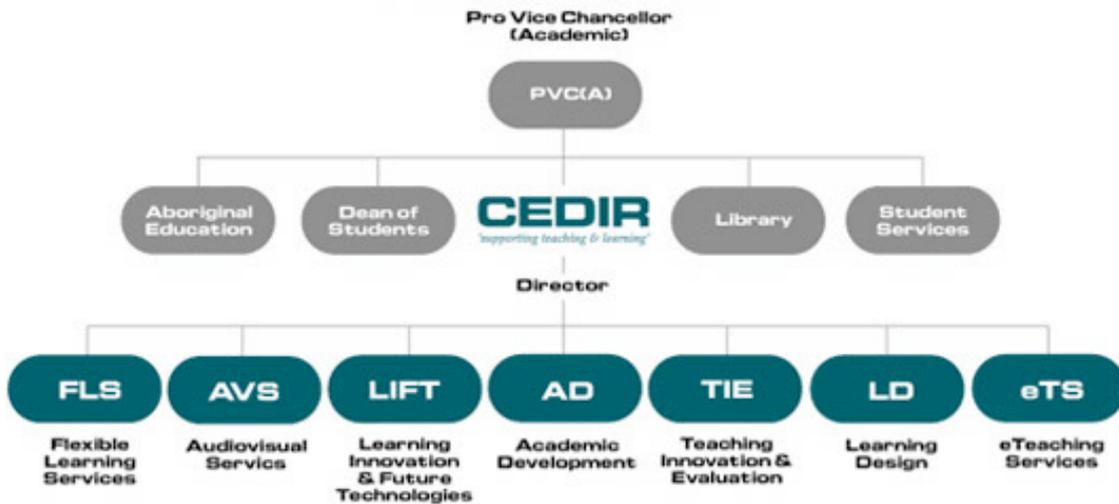
Figure 4: Centre for Educational Development and Interactive Resources (CEDIR)

For the benefit of the project staff, fortnightly Touchbase meetings were held which allowed new discoveries to be shared and problems to be aired in a collegial environment.

Educational enhancements

In a context where it was commonly (mis)perceived that use of the existing Learning Management System was mainly for uploading Powerpoint slides of lectures, it was essential to keep the focus of the LMS implementation on improving the University's approaches to teaching rather than on merely improving technology-based access to teaching materials. Although there were in fact many innovative and sound teaching applications of technology in the Faculties, it was felt that we had not brought these together in a coherent, consistent message about UOW teaching for the other teachers, supported by tools that enabled them to easily adopt and adapt those teaching strategies.

We enlisted the help of teachers from a variety of Faculties to provide UOW-specific stories providing advice about eTeaching which is visible only to staff. This advice about eTeaching strategies has been included in each subject site as a hidden learning module, eTeaching: Show me how (Fig 5), and is being developed into a series of case studies showing good practice in eTeaching.

Figure 5: Embedded eTeaching Strategies

The Learning Design Unit [HREF9], the primary interface of CEDIR to academics using eTeaching, was increased from 3 staff to 4.5. This group provides an educational interface between academics and production staff (programmers, graphic artists) and undertook development projects in about 60 Vista sites before Session 1 2006

- Initiatives specific to particular subjects have included
- restructuring of sites for easier comprehension and navigation,
- addition of explanatory diagrams to subject content,
- incorporation of video or animation content to clarify concepts,
- addition of surveys and self-tests for students,
- redesign of assessment.

We are also in the process of developing a selection of approaches to active learning as installable Learning Modules. These will hopefully facilitate UOW's ramp up of pedagogically sound online learning. This selection will underpin staff development, web resources and guides and reinforces the work of the Learning Design Unit.

In part this emphasis on Learning Designs was sparked by our participation in the national Learning Designs Project funded by the Australian Universities Teaching Committee (2000-2003) [HREF10].

Student orientation and support

Our previous student support was predominantly technical support. As recent student survey results indicated students do not often require this type of support, we decided to refocus our student support with a more educational bent, in the same way that staff development was less about skills training and more about contextual pedagogical development. We developed new student support pages for eLearning [HREF11] and these have been elevated to the home page of the University's website. The site carries information about all components of eLearning at the University of Wollongong, not only the LMS but also videoconference, eduStream, teaching space technologies, wireless access, Student OnLine Services, and Library Online. To widen access, a CD bearing equivalent material was distributed to all students and staff (25,000 copies) in February 2006.

UOW's Information Technology Services runs a Helpdesk for students that deals with all IT access issues including Vista problems, as well as providing roving support staff in central computer laboratories.

In consultation with teaching staff, we developed generic student support elements for each Vista site (Fig 6):

- a student forum,
- annotated and targeted links to library resources,
- documents clarifying students' responsibilities and rights.
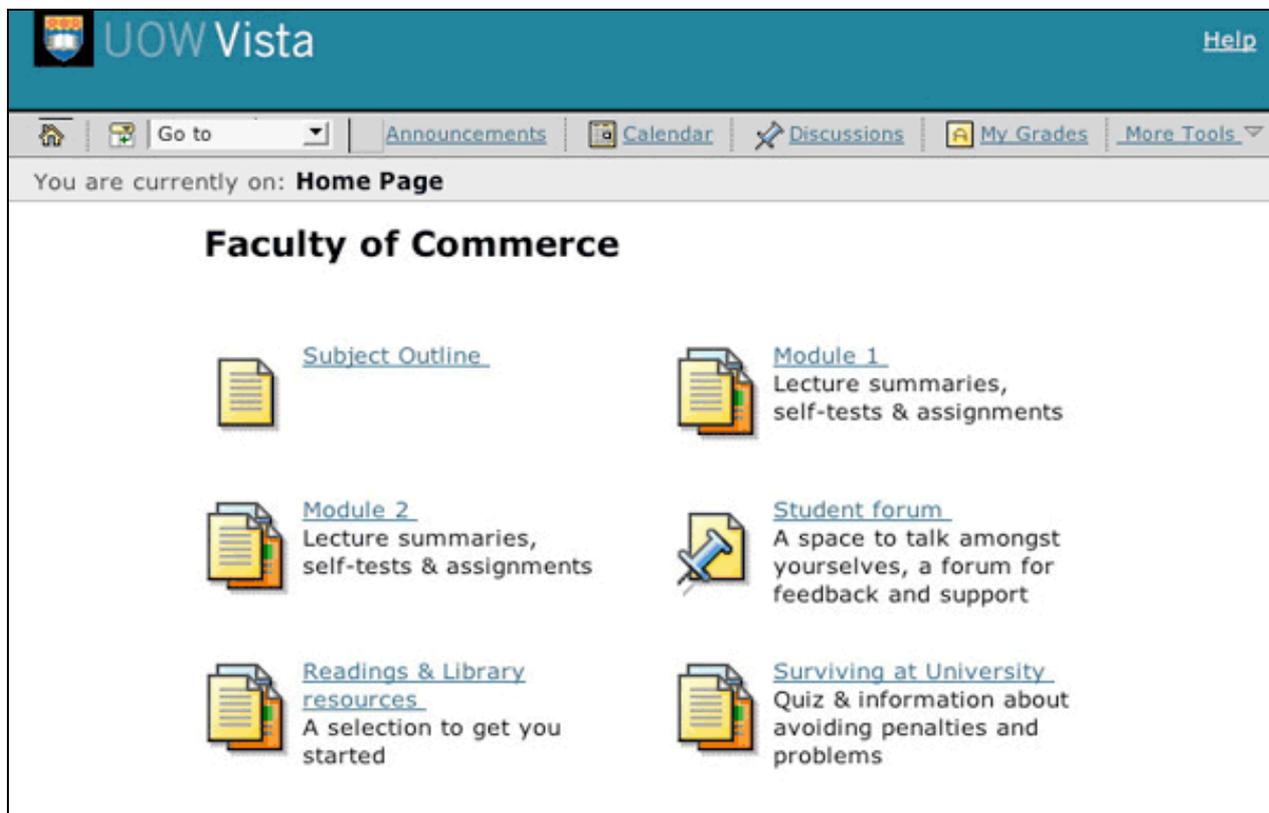
Fig 6: Student support in Vista sites

Site management at UOW

WebCT subject sites must be requested by teaching staff at the start of each new teaching session; once a site is established, students are automatically enrolled using the subject and student databases. Subject sites are removed from the server about two months after the teaching session and archived to disk. Student activity is removed from the site before reinstatement; the old teaching site is used as a template to create the new site.

Implementation

Migration

514 sites used in the Summer and Autumn sessions in 2005 were re-established in Vista using a template carrying the student support elements shown in Figure 5 and the staff support shown in Figure 6.

The navigation structure of the CE site was generally disrupted due to the absence in Vista of the left-side Control Menu of CE; sites that were extensively customised were greatly simplified in Vista. In part this is possible due to the change from a tool-based interface to a functional activity-based interface.

Numerous quality issues arose during migration, ranging from quiz text translation to loss of discussion structures. All of these issues were resolved on a site-by-site basis by the staff of CEDIRs eTeaching Services. The sites delivered to staff for Learning Design consultations were complete and operational, though visually unlike the original sites.

Summer session pilot

UOW teaches a Summer session beginning in early December and finishing in February. This has much fewer subjects on offer and class sizes are smaller than in normal sessions.

We used the Summer session as a pilot implementation of our new software and processes. 53 sites

were used (including 20 subject sites and 24 project sites).

The eLearning website [HREF9] mentioned above was established and publicised in time for the session, and both staff and student call centre support was in place. No serious issues arose; the pilot was a successful introduction to Vista for support staff.

While the Summer session pilot allowed us to improve many of our processes, we knew that many of the staff who taught in the summer pilot were casual employees, not the authors of the material and activities in Vista, and thus did not work with the sites and material in the same way that a teaching creator would do. As a result, some issues were not uncovered until the full implementation for S106 was in preparation.

Session 1 2006

Over 400 sites were migrated from CE to Vista or use in S106 in anticipation of lecturer requests. Only 52% of these were used; many academics chose to establish a new site.

While we experienced some periods of slow operation during the first few weeks of session (ITS were still dealing with installation issues), no disruption to service occurred. Surveys of both staff and students were carried out during January 2006 and general satisfaction with systems and support was reported.

Session 2 2006

Migration will be carried out in response to individual site requests (reinstate from Campus Edition S205, migrate to Vista, adjust for quality) rather than migration of an entire block of S205 sites.

What went right and wrong?

In general the Vista system is much easier to use as a designer or teacher than CE version 4. We have had no major issues with the installation; the pilot was a success and teaching in Session 1 2006 has proceeded largely as it would have with Campus Edition. The support elements we included in sites have been judged appropriate and useful.

ITS are pleased with the system stability and design, and look forward to adding/enabling more features over time. Since Vista uses an Oracle database and uses XML data for the IMS adapters our CE automated administration scripts had to be modified. The change of session process of cycling sections under Vista version 3 will need to be done manually until we upgrade to version 4.

Our anticipation of people problems was largely successful and enabled us to adequately prepare for issues before they arose.

Nevertheless, Vista failed to deliver on some significant expectations. The template/inheritance system we thought would be so valuable has been largely useless to us. Templates failed to behave as we expected because our site management procedure requires that sections be cycled at the end of each session. This promotion of a section to a template and then assignment to a new section breaks the links that were originally established to files higher in the Vista hierarchy. This meant that our educational enhancements were largely ineffective in the pilot phase and beyond it. The staff support elements of the template design had to be altered to replace all files with links to an external website so that updates to files would be reflected in existing sites. This is not a satisfactory solution as it means that fixed entries are required in the Learning Module structure. In addition:

- While Learning Modules are a clear advance on the equivalent in CE, Learning Modules cannot be exported from one site and imported to another with all their elements intact. This means that while we can create whole sites to a specific learning design, we can't create reusable learning design elements that don't require extensive handwork to be useful
- Links in Learning Modules to documents in the Vista file system failed if the document was edited and overwritten (since fixed)
- All staff were able to edit and delete files which were held in the master site template (since fixed)

Conclusion

Wollongong's project to replace WebCT CE with WebCT Vista was part of a strategic change in eTeaching/eLearning, broadening understanding and support services. Human factors were fundamental to its successful launch. We are more than half-way through the transition and have had no major problems so far. With technology less of a concern, we have managed to direct more effort to improving the University's approaches to teaching rather than on merely improving technology-based access to teaching materials.

The largely-successful pilot in Summer led to full implementation in February 2006. Our staff and students have accepted the change well and we anticipate continued success.

References

Agre, Philip E. (2002). "Infrastructure and Institutional Change in the Networked University", in William H. Dutton and Brian D. Loader, eds, Digital Academe: The New Media and Institutions of Higher Education and Learning, London: Routledge. Available online [HREF3]

Inglis, A. (2006). Unpublished survey of ACODE members, Australian Council for Open, Distance & eLearning.

Lambert, S. (2003). "Learning Design at the University of Wollongong", Interact, Integrate, Impact, ASCILITE, pp.643-647. Available online [HREF7]

Scott Morton, M.S. (ed), (1991). The Corporation of the 1990s: Information Technology and Organizational Transformation, Oxford University Press: New York.

Wills, S. (2006). "Strategic Planning for Blended eLearning" in Proceedings of 7th International Conference on Information Technology Based Higher Education & Training, Sydney, Australia, July 2006

Hypertext References

HREF1: Centre for Educational Development and Interactive Resources, University of Wollongong
http://www.uow.edu.au/cedir
HREF2: University of Wollongong
http://www.uow.edu.au
HREF3: WebCT Vista
http://www.webct.com/software/viewpage?name=software_vista
HREF4: Yetton, P. & Associates 1997, Managing the Introduction of Technology in the Delivery and Administration of Higher Education, Evaluations and Investigations Programme, Department of Employment, Education, Training and Youth Affairs, Canberra
http://www.dest.gov.au/archive/highered/eippubs/eip9703/front.htm
HREF5: Philip E. Agre, Infrastructure and Institutional Change in the Networked University
http://polaris.gseis.ucla.edu/pagre/cenic.html
HREF6: FAQ site
http://cedir.uow.edu.au/vista_transition/faq.html
HREF7: University of Tasmania
http://www.utas.edu.au/coursesonline/
HREF8: Vista Transition website
http://cedir.uow.edu.au/vista_transition/
HREF9: Learning Design at the University of Wollongong
http://www.ascilite.org.au/conferences/adelaide03/docs/pdf/643.pdf
HREF10: Learning Designs website
http://www.learningdesigns.uow.edu.au
HREF11: eLearning website
http://www.uow.edu.au/student/elearning/

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