A University goes online: Avoiding throwing the innovative baby out with the strategic bath water

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Abstract
University managers can see the imperative of utilising internet technologies in teaching and learning if their institutions are to survive in increasingly global and competitive markets. Their concerns revolve around managing the cost, quality and pace of development. Innovative teachers strive to invent new ways to improve the effectiveness of their teaching and enhance their students’ learning. The tensions between the different priorities of managers and innovators can manifest themselves in the perception and reality of lack of coherence and relevance to the larger group of staff and students. How can institutions resolve issues arising from this tension?

This paper describes the development, features and future prospects of UniSA.net, the online learning environment of the University of South Australia, in terms of these issues. The issues and approaches illustrated in this case study can provide insights into the process and challenges of introducing and implementing institution wide change.

Introduction
University managers can see the imperative of utilising internet technologies in teaching and learning if their institutions are to survive. Hardly a day goes by without the academic literature and the informed press reporting the effects of globalisation, competitive pressures and technological innovation on universities' practices (Katz, 1999). At the same time, innovative teachers are striving to invent new ways to harness technologies to enhance their students' learning experiences and improve the effectiveness of their instruction.

These two forces—of corporate strategy aimed at survival in a competitive marketplace, and a desire to improve learning outcomes for students—would be in conflict if it were not for the new and imaginative approaches now available to academics from reconstructed teaching practices. In large part these rely on some form of technological mediation for their embodiment. The question remains as to how to develop coherence and relevance in the technical solutions to meet the demands of academic leaders and students. While innovation in this area has thrived for many years, ways forward for universities to mainstream wide scale activity across the institution are not always clear.

Mapping the transformations
When embarking on the implementation of online technologies, universities are presented with a number of tensions. These tensions present themselves in the transformations their teaching environments and practices are undergoing. They are now described in more detail.

The online teacher is changing. Whereas in the past online teaching was carried out by a small number of innovators with esoteric technologies, the increasing ubiquity of, and demand for the technologies mean that online teaching is now required of the majority of university teachers. Thus online teachers can be characterised as 'late adopters' rather than innovators, and they therefore require tools that are easy to use and which do not require a
high level of technical skill. The desire is to use the technology as a tool rather than as an interest in itself.

The nature of online teaching activity is being transformed. Individualised and autonomous activity by academics founded on their own interests is now being supplanted by a need for a broader perspective. Universities’ strategic plans—some would say their survival—fundamentally rely on the use of online technologies in teaching and learning. Traditional pedagogies and teaching methods are being supplemented, and in some cases replaced, by online methods. The reality of the internet is now having an impact on both the way knowledge is acquired and on the nature of the knowledge itself. This requires the institution to provide not only infrastructure and tools, but also the staff development resources to allow staff to use them. This staff development must support the technological learnings required, assist staff to reconceptualise their teaching, and provide pathways from historical practices to those that allow staff to accommodate the changing nature of academic work, namely from deliverers of information to a managers of learning (Coaldrake & Stedman, 1999).

Fundamental to these changes are the notions of student centred learning and flexible delivery (King, 2000) implying that staff use the online environment to create new learning opportunities, rather than attempt to artificially recreate traditional teaching situations. It needs to be said that this distinction is not clearly understood by commercial software suppliers, who invariably produce products that are teacher-centric. Whilst the use of any software is in the hands of the teacher, these products assist the teacher to track and control the activity of students, rather than support them to provide resources and learning support for students to achieve particular outcomes.

New learning resource production techniques are appearing. Universities can no longer rely on cottage industry approaches. As the availability of online information and administrative services increases, so universities must take on efficient knowledge management techniques (Reid, 2000). This entails considering the production, dissemination, publication and authorisation of knowledge in post-Fordist post production-line terms, so powerfully enabled by internet technologies. While high-cost multimedia production will continue, the resource commitment this entails will be justifiable only in rare cases. More commonly successful will be agile and rapid methods that allow the university to tap a particular market or capitalise on a particular teaching approach, as and when opportunities arise.

Delivery approaches are being reconsidered. Traditional teaching methods, whether relating to face-to-face or distance programs, require substantial initial capital investment and maintenance, while online methods are much more easily scaled up from a smaller initial investment, depending on the particular online strategy employed (Reid, 1999).

These tensions are summarised in Table 1.
Table 1: Some tensions experienced by universities in using online teaching methods

<table>
<thead>
<tr>
<th>Focus</th>
<th>From</th>
<th>To</th>
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<tbody>
<tr>
<td><strong>Target teaching audience</strong></td>
<td>• Innovators leading development</td>
<td>• Needs of late adopters who do not wish to be technically skilled</td>
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<tr>
<td></td>
<td>• Small minority of teaching staff</td>
<td>• Majority of teaching staff</td>
</tr>
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<td></td>
<td>• Technologically highly literate</td>
<td>• Basic levels of technological literacy</td>
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<tr>
<td><strong>Nature of teaching activity</strong></td>
<td>• Individualised and autonomous activity</td>
<td>• Institutional responsibility to provide staff development</td>
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<td></td>
<td></td>
<td>• opportunities linked to institutional strategy</td>
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<td></td>
<td>• Development based on historical practices</td>
<td>• Changing nature of academic work</td>
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<td></td>
<td>• Placing traditional pedagogies and methods at the heart of teaching</td>
<td>• Recognising the impact of technology, and the web in particular on</td>
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<td></td>
<td>and learning</td>
<td>• everyday life and hence on teaching and learning</td>
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<tr>
<td><strong>Learning resource production techniques</strong></td>
<td>• Cottage industry/production line</td>
<td>• Post-Fordist methods of knowledge management</td>
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<td></td>
<td>• Team-based high-cost multimedia production methods</td>
<td>• Competitive, efficient, corporate approaches</td>
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<tr>
<td><strong>Delivery approaches</strong></td>
<td>• Development of face-to-face teaching spaces and distance education</td>
<td>• Agile and responsive approaches that allow opportunistic</td>
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<td>systems requiring capital infrastructure</td>
<td>developments in short time-frames</td>
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The question can now be posed: how should these tensions be resolved? In other words, how can the necessary transformations be effected without stifling innovation yet providing the power and flexibilities the online environment provides? This paper argues that the answer is not to buy a product. Nor is it sufficient to carry on as we have done in the past in isolated and unconnected innovation. Rather, a considered response that aims to integrate the best of the available strategies is proposed. The development by the University of South Australia, in the form of its online delivery system, UniSAnet, is now offered as an example of such a response.

**A case study of a resolution: UniSAnet**

Launched in March 1999, the primary aims of the UniSAnet project were to:
improve the promotion of the University of South Australia's courses,
improve the flexibility of its learning environment by providing online learning and
administrative resources, and
improve the institution’s strategic advantage by doing this in a comprehensive and cost
effective manner.
In other words to address the tensions described above.

In order to do this the project had the following objectives:
1. create an online presence for all staff, subjects and courses in the University
2. link this presence to online teaching and learning resources and facilitate their
   enhancement by staff by providing easy-to-use tools which incorporate instructional
design guidance
3. provide methods by which existing learning resources could be re-used and re-packaged
   for the online environment
4. re-engineer corporate information management processes to give primacy to the online
dimension, while maintaining quality
5. achieve all of the above in a sustainable manner without creating production ‘bottlenecks’

How these objectives were met is now described in more detail

1. Create an online presence for all staff, subjects and courses in the University

To do this, the concept of database driven web sites leveraging off corporately held data was
employed. Thus staff home pages were produced for all staff from the data held in the
university’s HR database. Staff home pages are available at

Home pages for all course and subject offerings were built by converting the university
Calendar into database form and then web-enabling those databases. These are available at
http://www.unisanet.unisa.edu.au/courseinfo/displaycourse.asp and

This then gave the institution, in a very short time a wide and solid basis on which to build
future developments.

The provision of well-designed and consistent user interfaces discharged the university’s
obligation to quality while allowing academic staff the freedom to create the content of the
learning resources as they saw fit. New possibilities opened up for staff. Whereas in the past
the creation of such web sites required the support of a team of educational designers and
technical experts, thus limiting the number of such sites that could be created in any time
span, the means to create well-designed web sites was now available to all staff. This moved
the institution from a cottage industry, single product approach, to a mass customisation,
knowledge management approach.

2. link this presence to online teaching and learning resources and facilitate their
   enhancement by staff by providing easy-to-use tools which incorporate instructional design
guidance

The means for academic staff to author and update their online subject and course materials
needed to be simple enough for the most basic level of technical literacy. In order to do this,
simple web-based forms and wizards were constructed for authoring and updating. The only
technical skills required to create online learning resources with these tools are the ability to use a web browser and to type.

Pedagogically the wizards provided a significant advantage. By building in instructional design advice, via the steps in a wizard, prior to the construction of online resources, the expensive activity of reshaping materials already created by academic staff by professional educational designers or editors, was removed. An example of a step in such a wizard eliciting decisions from staff about how to structure their materials is shown in Figure 1.

![Figure 1. A step in a UniSAnet wizard](image)

Using these wizards, staff can very easily construct a range of online learning resources, including interactive websites, feedback quizzes and asynchronous discussion groups. An example of a quiz is shown in Figure 2. Discussion groups are another feature which can be added.
3. *Provide methods by which existing learning resources could be re-used and re-packaged for the online environment*

Significant investments of time and money had already been made in the production of text-based study materials, often for distance education programs. As these had almost entirely been produced using standard templates, it was possible to create software that utilised the template’s structure to automatically create well-structured web sites from print materials. The sophistication of this software is such that the structure of the print document is detected and converted into linked navigation in such way that the materials both reflect the print materials faithfully and also create suitable ‘chunks’ of information for use on the web. Online information booklets produced in this way are available at [http://www.unisanet.unisa.edu.au/SubjectInfoBooklet/](http://www.unisanet.unisa.edu.au/SubjectInfoBooklet/) In addition existing innovative online materials could be simply linked in to the comprehensive presence provided by the home pages.

4. *Re-engineer corporate information management processes to give primacy to the online dimension, while maintaining quality*

As the primacy and currency of online materials became apparent, it was necessary to re-engineer the processes by which such information was created, stored and updated. An example of this was the university Calendar. This print document was in the past out of date as it went to print due to the lags in print production processes. The production process of the print document now relies on the online subject and course information stored on UniSAnet.

5. *Achieve all of the above in a sustainable manner without creating production ‘bottlenecks’*

The university had a degree of success in the production of materials where highly trained staff added value to materials. However, this was unsustainable even in medium scale production processes and could never be achievable for all subjects on offer. Production
bottlenecks were removed by the automation of processes that could be automated and by the devolution of control to the individual staff member wherever possible.

**Conceptualising the role of online learning materials**

The level of engagement with any form of delivery is rightly a decision for individual academics within the university. UniSA.net enables any staff member to author web-based learning resources that can have one of three roles. The resources may be supplementary to other modes of teaching, they may complement current teaching in some way by providing particular enhancements by their use of the online medium, or they may even replace previous teaching methods (George, 1998). By placing these choices in the hands of academics, and by incorporating instructional design guidance to staff as the resources are produced, using online wizards and forms, the problems of costly post-production work and consequent bottlenecks are avoided. UniSA.net's consistency and ease of use further facilitates professional development work, and provides learners and teachers with informed choices regarding the level of their engagement with resources delivered online (Reid and Slay, 1999).

Thus professional development activities and resources focus briefly on the technology, but very rapidly focus on the purposes of the online dimension and its role in the teaching approaches of individual staff. Thus staff are able very rapidly to focus on curriculum development for developing graduate outcomes (Nunan, 1999) and to embed learning support resources appropriately (Hicks, Reid and George, 1999) without being unduly distracted by the learning overhead presented by new and complex technologies.

**Incorporating innovations**

So far, issues of systemisation and strategy have been described. How then, in this context, can innovation be fostered, while maintaining this strategy, and enabling the entire university to benefit? This has been achieved in two main ways. First, the work of innovators has been fostered by teaching improvement grants which have frequently used the skills of technical staff within the Flexible Learning Centre, where UniSA.net is also developed. This allows the technologies to be developed, trialed and evaluated for their effectiveness. From the student perspective, these online sites can be simply integrated into the home pages described above, and their use is seamless.

The second and more powerful way in which innovation can be fostered is to provide the technology developed for these innovators into the UniSA.net platform, thus allowing the techniques developed to be made available to the entire university. For example, when there was a need identified for the use of foreign language characters in discussion groups, this was developed for the staff member on the understanding that the feature would then be made available to all discussion groups. Similar examples include the development of online evaluation tools (Reid and Welch, 2000) and the particular features required in online quizzes. It needs to be pointed out that this ‘capture and mainstream’ process is only possible if a central unit of technical and academic staff develops both the innovative tools and the online platform to which they are linked.

In this way innovations are encouraged, and implemented so that their benefits are not restricted to a small number of teachers and learners. This is strategy in action. Add to this the linking of these teaching tools to an information management strategy, and the university has the ability to make quality gains in both teaching and administration. Such an approach is also congruent with the Federal Government’s desire to fund innovation that has an institution-wide (or cross-institution) impact.
Effects

The UniSAnet development aimed to:

- incorporate the work of innovators and support the late adopters of technology
- cater for staff development needs, and the changing nature of academic work
- link online delivery with institutional strategy, technical viability and economic sustainability
- change resource development practices from the traditional multimedia product models to an online learning system view, involving devolved approaches (sometimes termed ‘post-Fordist’)
- develop strategies that are agile and flexible, in order to be able to rapidly respond to changes in the external environment
- respond to the impact of the web on all facets of life, and in particular to harness the opportunities it presents a university as a whole, and individual teachers and learners.

Qualitatively, it can be seen to have met these objectives and to have further progressed the use of online technologies in teaching and learning. Feedback from within the university from staff and students has been positive and external interest from both commercial software providers and universities aiming to benchmark practices, also confirms its level of innovation and overall quality.

In terms of quantitative data, the reader is invited to view the progress of the resource development from the UniSAnet statistics page at http://www.unisanet.unisa.edu.au/stats. The main UniSAnet web server had over 12 million hits in 1999, and over 6 million before the end of March 2000. Its current growth rate is so rapid that any statistic quoted here is bound to be out of date by the time of publication. Whilst hit statistics area a very crude measure of use, the growth in these statistics is worth consideration.

Conclusion

The tensions between innovation and consistency, between improving learning and corporate strategy remain with whatever path a university takes in 'going online'. The case of UniSAnet aims to demonstrate one resolution of the tensions, but this resolution will always be partial and changing over time. Whilst it can be described as a centralised systematic approach yet devolving control to individual academics and accommodating innovative work, the particular characteristics of the approach will inevitably change rapidly over time and as the institution's strategic goals develop. This dynamic situation serves to further underline the need for a strategic approach without stifling the lifeblood of teaching - striving to improve learning.

References


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