The Stories That Documents Tell: Changing Technology Options from Blackboard, Webfuse and the Content Management System at Central Queensland University

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Abstract

This paper analyses selected documents written about, and for, three of Central Queensland University's educational technologies and what those documents say about current issues and strategies in the technologies supporting teaching and learning at the university. The paper draws four significant implications from this analysis. Using the stories that documents tell to learn from changing technology options for teaching and learning innovations requires attentiveness to, and an engagement with, these implications.

Introduction

This paper is part of an ongoing interrogation of constructions and understandings of educational technologies at Central Queensland University (CQU). The paper focuses attention on the documents written about, and for, CQU's educational technologies and what those documents say about current issues and strategies in teaching and learning at the university. These documents were written by a variety of authors, ranging from staff members of working parties to an outside agency commissioned to write a strategic plan for the university; most relate to CQU as a whole, while one refers to a single faculty. We focus on three such technologies:

1. Blackboard, an external, enterprise system, as the university's supported course management system
2. Webfuse as an in-house built, individual faculty-based, course management system
3. An in-house built content management system.

The analysis of the documents relating to these technologies demonstrates that the predominance of administrators in writing these documents, and their general attraction to commercially available in preference to in-house systems, mean that the teaching and learning issues associated with such technologies are often downplayed and overlooked in the documents. Furthermore, these documents tend to construct debates around technologies and teaching and learning as prematurely settled and finalised; whereas, in fact the questions underpinning those debates are likely to recur regularly as technical options change and in response to the centrality of the questions in the university's core operations.

The paper draws four significant implications from this analysis of documents' stories about educational technologies at CQU. If we—understood as all those with an interest and a stake in the effectiveness of teaching and learning innovations—are to learn from changing technology options for such innovations, we must be attentive to, and engage with, these implications.

Background

As at other Australian universities, staff members at CQU are concerned that the educational technologies deployed by the university are as effective, efficient and equitable as possible. With funding limited and particular technologies at different stages of the technology life cycle, decision-making about the selection and implementation of such technologies is complex and sometimes contentious.

Within that complex and contentious environment, this paper is intended to contribute to a broader literature relating to information technology as a driver of organisational change. Researchers (Cnaan & Parsloe, 1989; Tapscott, 1996) have argued that, because information technology is in a state of perpetual innovation, it has introduced a level of complexity within organisations that is different from anything that has been experienced before. Moreover, the difference between the success and the failure of information technology implementation is due to the unique characteristics of an organisation (Brynjolfsson & Smith, 2000; Davenport, 2000). An organisation's ability to encourage innovation in both technical and organisational arenas is crucial to remaining competitive in an increasingly changing world (Davenport; Schein, 1992). Therefore it is important for managers to understand how information technology enters organisations—including universities—and transforms some of their practices (Schein).

Within that broader literature, this paper forms part of a continuing analysis of technology use at CQU. Elsewhere our colleague and we have identified the influence of occupational subcultures on the take-up of the university's course management systems (Luck, Jones, McConachie, & Danaher, 2004); we have evaluated such systems in terms of their capacity to engage with the drivers of change in contemporary Australian higher education (McConachie, Danaher, Luck, & Jones, 2005); and we have analysed the use of such systems by an academic, a designer and a librarian in terms of their negotiations with the potential for innovation versus the forces of managerialism (Danaher, Luck, Jones, & McConachie, 2004).

Here our focus is on what documents relating to the three technologies identified above reveal about how those technologies are understood and positioned, whether the documents' authors are CQU academics, administrative and technical support staff, university managers or outside agencies as indicated above. Each technology constitutes a particular element in the university's changing technology options;

each technology is associated with specific claims about helping to boost technological innovations in teaching and learning; and each technology is situated in ongoing stories about learning from change in Australian universities today. Equally importantly, each technology is constructed in specific ways by students, academics, managers and administrative support staff members in terms of what they can—and cannot—do in terms of promoting effective, efficient and equitable teaching and learning at the university.

We deploy the two key elements of Brown and Duguid's (1995) seminal account of "the social life of documents"—social interactions and negotiated meanings—as a methodological framework to analyse the nuances, significance and silences of selected documents about the three technologies under review and about the strategies and practices in teaching and learning that they encapsulate and enact. The stories told by these documents highlight multiple and competing discourses about the value—and the values—of particular decisions about the technologies and of their respective take-up by university stakeholders, animated by those stakeholders' assumptions about teaching and learning.

The application of this methodological framework centred on a shortened version of 'reciprocal reading', as outlined by Owen (2000), who noted:

> Reciprocal reading…is a particularly useful activity when learner consensus and understanding of a particular document or issue is [*sic*] needed. It encourages deep reading, shared understanding and an exchange of perspectives on a given issue. (n.p.)

That is, the authors deployed the advantages of collaborative research and writing by individually reading the selected documents, then meeting to discuss their implications and significance. That discussion was framed by the authors' responses to the following guiding questions:

- Who were the authors of the documents?
- What were the authors' goals, interests and speaking positions?
- Which stakeholders were identified and/or assumed by the authors?
- Which interests and issues were identified and/or assumed by the authors?
- To what extent was a range of views about these interests and issues articulated by the authors?
- In which ways were social interactions and negotiated meanings evidenced in the documents?

The discussion was informed also by the authors' separate and shared knowledge of the political contexts and the technical dimensions of the documents' creation. The process of analysing the documents was therefore collaborative, iterative and reciprocal, and drew on the authors' understandings of influences and factors significant in the rationales for and the impact of those documents.

Discussion

We conducted an initial sweep of available documentation pertaining to educational technologies at CQU, and then we completed an intensive examination of selected documents relating to the three nominated technologies. The main criterion for selection was to look for reports written by external consultants as historically the university has placed a greater emphasis on external reports than on internal reports. The other criterion was to look for internal documents commissioned by the Senior Executive of the university as the recommendations from these are more likely to be implemented than from documents originating from a work unit. Our analysis has been divided into the three technologies, although it should be noted that some observations carry across individual

technologies, particularly Blackboard and Webfuse as two different examples of
course management systems. (In the documents, sometimes these systems are
referred to as 'Learning Management Systems' as well as 'Content Management
Systems'.)

Blackboard

Blackboard is one of several commercially available software systems designed to
support electronically such integral elements of teaching and learning as
communication with students, student assessment, presentation of study material
and organisation of student activities. In 2004 CQU replaced WebCT with
Blackboard as its institutionally supported course management system.

In our analysis we chose not to use the CQU strategic plan because it is written at
too abstract a level and the implementation strategies were not specific enough
with respect to course management systems. The flexible learning white paper had
been commissioned by the Senior Executive but the membership of the Senior
Executive had changed and the recommendations of this paper were not going to
be implemented.

Instead we focus in this subsection on the report of the four working parties
established to evaluate the respective strengths and limitations of the four proposed
course management systems for the university (Central Queensland University,
2003): Blackboard; Educator; WebCT; and Webfuse. Each of the four working
parties examined one of the following areas in relation to all four course
management systems:
  * Management/Commercial
  * Educational evaluation
  * Design/Development evaluation
  * Technical evaluation.

The first report (entitled 'Commercial issues' on the report itself but 'Management
issues' on the overall document's title page) contained a summary of the company
and product profiles. The information presented here was gleaned mostly from
web-based references, including company websites. Although the report noted that
"Material found on the WWW [World Wide Web]" about two of the systems "is
descriptive testimonial rather than evaluative" (p. 2 of 2), the absence of references
to such evaluative material in refereed publications is noteworthy (although the
report did remark that the websites of universities that had previously evaluated
one or more of the systems generally did not provide information about the basis of
those evaluations [pp. 8–9 of 11]). The report did not make a recommendation to
select a particular system.

By contrast, the educational evaluation working party made such a
recommendation: that the university adopt Blackboard on the basis of its "being the
most user friendly, with a high level of functionality and good prospects for future
stability" (p. 3 of 9), but also that the university evaluate Webfuse 'more fully'
(p. 3 of 9). This working party also noted a point that we make below: that the
university's "policy is to buy rather than develop" educational technologies (p. 8 of
9). As is sometimes the way with working parties and the documents that they
write (and the stories that those documents tell), perceptions are often powerful
shapers of constructed realities and consequent actions: we are not aware of an
officially sanctioned statement giving effect to this 'policy'; instead, it occurs in
the form of a recommendation from the university's commissioned Information

Technology and Telecommunications Strategic Plan (Central Queensland University & Gartner Consulting, 2001/2003).

A conflicting recommendation was made by the design/development evaluation working party: "…we propose remaining with WebCT whilst assigning a fully resourced project team to refine and develop Webfuse to become the CQU LMS [learning management system] of choice in 2005/6" (p. 7). At one level, the working party's composition by developers might suggest a preference for a system on which they might be likely to work in the future. At another level, their stated "long term" rationale for their recommendation pointed to concerns with issues that were specific to the university:

- "a more flexible, future proof Learning Management System
- a product that responds to the CQU environment of multi campus/international campus business
- a product that reflects the Australian market rather than American HE [higher education] market" (p. 7).

Like the evaluation working party, the technical evaluation working party recommended Blackboard "strongly…[as having] the best overall technical fit and provid[ing] the best opportunity available to meet our tactical needs while minimizing support problems and costs" (p. 4 of 17), although it noted also that "either the WebCT or Webfuse product could fit our technical requirements" (p. 4 of 17).

The summary report of the four working parties evaluating four contenders as CQU's officially supported course management system (Central Queensland University, 2003) signifies a number of points. Firstly, the institution's complexity and diversity are represented in the number and range of working party members. Secondly, an equivalent complexity and diversity underpinned the technology options considered in the report: in combination, the working parties had to consider administrative, educational, design/development and technical issues and associated stakeholders and subcultures. Thirdly, although Blackboard was recommended by two of the four working parties, its support was by no means universal, suggesting the likelihood of future disquiet if Blackboard were perceived by particular groups not to be providing what they assumed it was purchased to provide. (This disquiet did in fact resonate through the report of a working party established to evaluate Blackboard in its first year of operation [Central Queensland University, 2004].)

Webfuse

By contrast with Blackboard, which is a commercially available course management system, Webfuse is a course management system that was developed by staff members of the Faculty of Informatics and Communication to address the specific needs of academics and administrators working at CQU. At different times Webfuse has received varying levels of official support: at one time it was allocated a number of developers to expand its operations, while more recently it has been positioned by some university decision-makers as being in competition with WebCT and then with Blackboard.

This appears to be linked with the evidently greater focus in the documents that we examined on commercial systems that support university administration (such as PeopleSoft Financials and PeopleSoft Higher Education) than on systems that

support academics' work needed to implement the administrative systems (such as Webfuse). This imbalance could be explained by a number of possible factors:

- the more powerful speaking position, and hence the greater appeal to administrators, held by commercial than by in-house systems
- administrators' lack of detailed working knowledge of academics' work and the contribution of that work to making the administrative systems operational
- the fact that the officially sanctioned documents tend to be written by administrators.

That is an appropriate discharge of their function; our point here is that these multiple understandings of what is needed to make the institution 'work' tend to be elided from the documents, so that debates are closed down rather than explored more fully and are often not even acknowledged as occurring. This point was implicitly acknowledged in the university's commissioned Information Technology and Telecommunications Strategic Plan (Central Queensland University & Gartner Consulting, 2001/2003):

> While recognising that the investment in the People Soft ERP [enterprise resource planning] system is a necessary pre cursor to [the] expansion of flexible learning to multiple geographies, the significant investment in this system has concentrated attention away from core teaching and learning applications. (p. 14)

Within that context, it should be noted that Webfuse, although developed within the Faculty of Informatics and Communication, has been used by large numbers of staff members from other faculties to enable them to do easily and quickly what PeopleSoft has not enabled them to do, such as printing class lists before the start of the term. Yet Webfuse is mentioned extensively only in two major university-wide documents. One was the previously cited summary of the four working parties set up to evaluate four contenders for the position of the university's designated learning management system (Central Queensland University, 2003). The other was the 2004 Annual Report about the Management Plan for Teaching and Learning 2004–2008.

By contrast, in the same year that the Learning Management System Working Parties produced their report, the author/s of the Faculty of Informatics and Communication annual report stated unequivocally that:

> [t]he best thing about teaching and learning in this faculty in 2003 would be the development of technologically progressive academic information systems that provide better service to our students and staff and make our teaching more effective. Webfuse and MyInfocom development has greatly assisted staff to cope with the complexities of delivering courses across a large multi-site operation. (Central Queensland University, 2004, p. 21 of 50)

Similarly, although Webfuse has been used since at least 2000 as the main platform for delivery within the Faculty of Informatics and Communication (itself one of two faculties at the forefront of the university's online learning provision), Webfuse appears not to be mentioned in any academic policies within the university (although neither is Blackboard or its institutionally supported precursor WebCT).

In terms of Brown and Duguid's (1995) emphasis on social interactions and negotiated meanings as constituting "the social life of documents", these disparities signify broader debates and discontinuities, including about how (de)centralised decision-making about technology options at the university should be, the relative influence on such decision-making of different occupational groups and subcultures within the university and the degree of mutual understanding evinced by those groups and subcultures. Thus the constructed conflict between Webfuse and commercial course management systems, and the interplay between university-wide committees and the Faculty of Informatics and Communication, are symptomatic of wider social interactions and negotiated meanings around such implicit questions as "Which technologies work best for CQU's multiple stakeholders?"

Content management system

By contrast with course management systems, particularly Blackboard, very little appeared in the collected documentation about the content management system. This system was developed in-house in 2004 and is being implemented across the university in 2005 to manage on an institution-wide basis such activities as the generation and updating of Course Profiles and policies.

The university's commissioned Information Technology and Telecommunications Strategic Plan (Central Queensland University & Gartner Consulting, 2001/2003) included the observation that "Areas considered a high priority for investment" included "[A] Knowledge Management System" (p. 6), a synonym for the kind of content management system under discussion here. This observation needs to be juxtaposed with the strong injunction throughout the strategic plan to "Adopt a 'buy, don't build' strategy" (p. 17), that is, to purchase commercially available systems rather than to develop those systems in-house as far as possible. The justification for this injunction was both financial and administrative: it was assumed that commercially available systems are less expensive overall and that in-house systems tend to be more difficult to monitor and control from a whole-of-organisation perspective. The plan did acknowledge occasions when commercial systems that fulfilled the university's precise requirements might not be available; presumably this applied to the development of the content management system.

The point to emphasise here is that the university's commissioned information technology and telecommunications strategic plan constructs the "'buy, don't build' strategy" as settled and unproblematic. On the contrary: debate continues about the desirability, even the possibility, of commercially purchased enterprise systems *vis-à-vis* in-house systems (sometimes called 'shadow systems'; see Behrens, 2004). This debate has a financial component, yet importantly it elicits divergent views about the most effective means of implementing educational technologies in a complex institution. Given the dynamic state of development of those technologies, it is unrealistic to believe that the debate is either settled or unproblematic—not least because the debate evokes even more fundamental questions such as student learning, professional identities and individual and institutional values.

Implications and conclusion

The preceding section of the paper presented the analysis of the stories told by selected documents about three educational technologies at CQU. This analysis reveals divergent assumptions about ideal and actual forms of decision-making

around information technologies at the university, and more broadly about the most effective means of enacting and evaluating organisational change in order to enhance the provision of teaching and learning. There are four proposed implications of this analysis for engaging with changing technology options at the university.

Firstly, we asserted the methodological power and utility of portraying "the social life of documents" (Brown & Duguid, 1995). For us, the preceding analysis has highlighted the 'dark recesses' and 'hidden depths', as much as the 'bright lights' and 'public spaces', associated with such documents. Rather than being discursively innocent or politically neutral, these documents have much to say about the positions, pressures and tensions associated with technology choices at CQU.

Secondly, it is vital to map and evaluate the multiplicity of interests and perspectives attending the technologies discussed in those documents. Rather than closing down and driving underground the interests and perspectives that are implicitly ignored and hence devalued by the documents, the university should incorporate the broadest possible range of assumptions and ideas into its policies and procedures relating to teaching and learning.

Thirdly, our analysis draws attention to the situated power of the writers of the documents. Those writers do not always perceive this power; nevertheless it is an inevitable consequence of their occupying the dominant speaking position of writing authorised texts. It is therefore part of their authorial responsibilities to recognise their obligation to consider and make explicit alternative viewpoints when engaged in that writing.

Fourthly, the analysis presented here confirms the fundamental link among technologies, documents and teaching and learning strategies and practices. This confirmation accords with Laurillard's (2002) recent emphasis on university teaching responding to what is known about the characteristics of student learning to develop teaching strategies for the effective use of educational technologies: the stories told by the documents under review help to render explicit varying assumptions about those characteristics and strategies.

More broadly, the paper contributes to the literature on information technology as a driver of organisational change. In particular, the paper reinforces the understanding that neither information technology nor organisational change is politically innocent or neutral; on the contrary, both phenomena are shot through with the political alliances and interests of the organisation in which they are located. This situation should not be lamented; instead it should be seized strategically by people of goodwill and integrity seeking to render the organisation more effective, efficient and equitable for all its stakeholders.

Finally, the paper has demonstrated that stories, as told through selected documents, are highly evocative of broader issues associated with changing technology options at CQU. Accordingly, "the social life of documents" (Brown & Duguid, 1995) is one among several useful means available to us of understanding, and thereby of enhancing, the technologies supporting teaching and learning at the university.

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