Rich media technologies and uncertain futures: Developing sustainable, scalable models

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Rich media technologies are commonly defined as technologies that enable users to engage in interactive communication, with the ability to see, hear and interact with multiple communication streams synchronously or access them asynchronously. Rich media technologies are also characterised by their ability to support non-verbal communication such as body language and vocal inflection. The rapidly increasing access to rich media technologies such as video and web conferencing both commercially available and as open source, provides a wealth of opportunities for education. This is a rapidly changing landscape as existing and emerging technologies increase both access and expectation in regards to communication. Coupled with this is the growing recognition that new generations of students have greater expectations of media rich learning opportunities and in many cases institutions are poorly placed to respond to this demand.

While rich media technologies such as videoconferencing have been available for some considerable time, the adoption of these technologies is often problematic, resulting in ad hoc usage and little ability to cater to unexpected demand. Few institutions have adopted successful approaches to sustainable or scalable use of these technologies. This paper explores some of the reasons why sustainable and scalable adoption of rich media often fails, including the need to involve all stakeholders in decision making processes. It outlines an Australian Teaching and Learning Council funded project on leading rich media implementation collaboratively which seeks to address some of the issues faces by the sector and reports on progress to date.

Sustainable and scalable implementation of rich media technologies

The Australian Teaching and Learning Council (ALTC) funded leadership project, 'Leading rich media collaboratively: Mobilising international, national and business expertise', aims to develop a model for sustainable and scalable implementation of rich media technologies. This project seeks to:

- Promote strategic decision-making in relation to rich media technologies and associated infrastructures in institutions and in the sector;
- Identify and promote innovative and appropriate pedagogies for rich media use;
- Explore strategies for effective implementation of rich media technologies;
- Identify the use of rich media technologies for teaching and learning including collaborations for small courses, cross-institutional programs, industry-university collaborations, and 'niche' courses.

Background

These are uncertain times in higher education as governments and institutions seek to respond to the rapidly changing and developing demands of an emerging digital society. Information and communications technologies and associated applications are proliferating, creating both educational opportunities and expectations (JISC 2007; Tynan, Lee & Barnes 2008). The new generation of learners, with their expectations for the ways in which technologies can be utilised for education, suggest the opportunity for new academic traditions, particularly in respect of learning, teaching and research (Bowden & Marton 1999; Windham 2006; Leslie & Landon 2008). As Barnes and Tynan (2007) noted, the next generation of students live in a new technological world where work, play and learning are increasingly integrated.

The fact that technology plays a significant role in the lives of almost all who dwell in developed nations, and increasingly in developing nations, is incontrovertible (Greenberg & Austin-Li 2005). The rates of change of technology in the first decade of the twenty-first century are the highest ever and the trend is one of acceleration (Kurzweil 2003). Online learning has been widely adopted for higher education and has been taken up by many universities during the past ten years. Further, the research agenda has broadened and as Beetham (2005) noted, a range of opportunities and areas for research relevant to online learning exist. While there have been some notable additions to online learning, or elearning, in its short history, content is still very reliant on text. However, there is a rapid shift in higher education towards other existing and emerging communications technologies, in particular rich media, that have the benefit of permitting vocal attributes and body language (Daft & Lengel 1986:560 cited in Baecker 2003).

The first browser for the World Wide Web was released in 1993 (Cailliau 1995) and the first web pages were text rich. Fifteen years later the typical online experience is somewhat different. Rich media have been integrated into many online applications. Web pages often contain moving images and audio is not uncommon. Users download or stream media for many purposes. Simulations, games and alternate worlds are also found online and provide a particularly media rich experience for their users. Collaboration technologies are becoming increasingly widespread and it appears that media rich content is becoming the tradition of the web. Today the web is a venue for interaction. Social software sites are not only places for users to tell and show others of their exploits, they are also venues for rich media interactions. In a recent survey (Caladine 2008), university students indicated that as well as the expected popular communications tools, Windows Messenger and Skype, video communications embedded in social software were becoming popular. It appears that as well as media rich content a tradition of rich media interactions is evolving and will soon be in demand by students and staff in higher education institutions (Oliver & Goerke 2007).

Barriers to successful integration of rich media

While rich media technologies such as videoconferencing have been available for quite some time, institutions have largely been unsuccessful in implementing these technologies in a sustainable and scalable manner. While there are some success stories including the University of New England, University of Wollongong, Central Queensland University and James Cook University, this is not reflected across the sector. In general, the use and practice of embedding new technologies in higher education is often undertaken poorly with little thought or support given to the pedagogical frameworks needed to underpin effective practice. Commonly, new technologies suffer from the 'old wine in new bottles' syndrome (Andrews & Klease 1998) therefore, the same teaching and learning traditions are continued in the same comfortable ways in which usual teaching and learning occurs. Kirkup and Kirkwood (2005) report that 81% of academic staff in their sample recognised information and communication technologies as crucial change mechanisms. However, this recognition did not mean that most academic staff made the necessary changes to their teaching and learning practice to make the best use of these technologies even though they believed in them (Smyth, Stein, Shanahan & Bossu 2007). Kirkup and Kirkwood (2005) also found that staff tended to use technologies in the way they have always taught. Tynan, Lee and Barnes (2008:3358) confirm this

> …they [academic staff] have a tendency to simply re-create and replicate what they already do, as opposed to using ICT to teach radically new ways Such limited approaches are perhaps inevitable when the institutional framework for change is lacking. Without explicit policy direction, and adequate resources, it is hard for academic staff to make a break from past pedagogies.

Part of the reason for this conservative approach to teaching and learning with new technologies is the extent to which teaching modes in higher education reflect the lived experience and beliefs of academic staff. This has been primarily true of the use of videoconferencing in particular. Despite a range of potential pedagogies (Smyth 2005), didactic use of the technology has dominated its affordances, in many cases having a negative impact on take-up (Smyth, Andrews, Tynan & Caladine 2007). Students can feel disenfranchised by inappropriate applications of technology.

In considering the barriers to integrating rich media technologies, little account has been taken at institutional levels in meeting the well recognised characteristics of the new generations of learners (Oblinger & Oblinger 2005) who, amongst other things, demonstrate strong preferences for rich media technologies in the tools they choose for a wide variety of social, learning and work interactions (JISC 2007; Barnes & Tynan 2007). Many academics feel daunted by the demands of these expectations and feel unsupported by their institutions in developing the skills required to successfully adopt and utilise these new technologies. The focus for promotion in most institutions in mainly on the research aspects of academics' workloads (Clegg 2003; Mathias 2005), providing little incentive for staff to invest the time required to acquire new skills and make the necessary curriculum changes if these technologies are to be successfully utilised. This highlights the fact that, in many cases, existing policies, procedures, and infrastructure within institutions are ill-equipped to integrate rich media technologies (Smyth, Andrews, Tynan & Caladine 2007), or to meet learner expectations in relation to technology supported learning (JISC 2007; Barnes & Tynan 2007) in a sustainable and scalable manner (Tynan, Lee & Barnes 2008). In particular, new models of learning, teaching and professional development are required to effectively integrate these emerging technologies (Smyth, Andrews, Tynan & Caladine 2007; Smyth & Zanetis 2007; Barnes & Tynan 2007), requiring major changes to the ways in which institutions support teaching and learning. Traditionally, higher education institutions are slow in addressing new issues, technologies and policies (Portugal 2007). This makes the transition from a text environment to a rich media environment in higher education particularly challenging.

The current environment in higher education provides a unique opportunity within the sector. Seeing the opportunities and affordances offered by emerging rich media technologies, and responding to the push by students for more collaborative, interactive and technology supported learning, many higher education institutions are currently adopting tools which enable and support rich media interactions such as online collaboration packages and videoconferencing. However, the picture is changing rapidly. The future is one that includes a wide variety of rich media content, common use of holograms, easy access to mobile phone downloads, synchronous and asynchronous audio/video/DVD lectures (Portugal 2007). This is a transitional time in higher education (Portugal 2007) and provides an opportunity for the sector to address its poor record in relation to sustainable and scalable use of rich media technologies as a means to address current needs and as yet uncertain future needs.

Leading rich media implementation collaboratively

The conceptual framework for the study utilises Sergiovanni's (1998) concept of the 'professional community'. This approach was taken in an attempt to ensure successful change in practice outcomes, a common failure in educational change initiatives (Fullan 1998). Concepts of expertise, collegiality, professional obligations, norm and conduct are the core values required to achieve success in achieving deep and enduring change. The mediating variable essential to motivate the sector for change is the stakeholders and the staff in universities and partner institutions. The project is operationalised through the use of the Competing Values Framework (Vilkinas 2006).

a. Looking after the people – collaborative and coordinated approach drawing upon a range of informal university networks;
b. Dealing with change – key policy and practice stakeholders facilitating change and reducing existing barriers;
c. Getting the job done using the expertise of the various contributors –
- Internal focus (facilitators, delivers, monitors, mentors),
- External focus (innovators and brokers);

d. Getting resources committed.

Data collection utilises both quantitative and qualitative methodologies. Critical data sources include a comprehensive literature review and an audit of institutional practice. The 'grey data' of institutional practice will identify institutional practice in relation to usage of rich media, policies and procedures in place or under development, 'lessons learnt' pedagogy, staff development and support, models of

operation and costs. A comparative case study approach will be implemented to highlight the issues identified in the project.

The project has two distinct phases over two years. Stage 1, year 1 includes establishing the project, and gathering grey data. The identification of theory and practice in relation to current implementation of rich-media technologies is an intended outcome of this stage. Stage 2 will focus on supporting changes in practice. This will include developing professional development resources and establishing the inaugural Australian community of rich media experts (ACRME) forum.

Progress to date

The initial approach to institutions to participate in the project has been highly successful, with twenty-four of Australia's 38 higher education institutions coming on board with often up to five contacts for information. This exceptional response highlights the importance of rich media technologies and their successful integration into institutional practices to the sector. It is anticipated that further institutions will 'sign-up' as the project progresses.

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