

TITLE OF PAPER: The Time is Right - an ICT framework for Networked Learning

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## **The Time is Right - an ICT framework for Networked Learning**

*Experience and innovation in Networked Learning at the School of Information and Electrotechnology of Otago Polytechnic and the Otago Schools' Technology Education Centre (OSTEC), Dunedin, New Zealand*

The symbiotic evolution of Internet and desktop PC technologies during the past decade has moved the delivery of networked learning from promise to burgeoning reality. Such a development is timely not only because of the opportunities for enabling interactive group learning in geographically distributed communities but also because of the increasing trend towards asynchronous delivery within traditional learning environments.

Whilst tracing Otago Polytechnic's School of Information Technology and Electrotechnology's experience in solving networked learning problems a number of solutions continually modified with respect to evolving technological capability are presented as a viable pathway for general implementation.

The School has faced a wide spectrum of problems ranging from the national delivery of Information Technology teacher professional development to the introduction of collaborative and asynchronous learning in the Bachelor of Information Technology (BIT) programme. In both cases, geographical distribution of students was a common element with learning centres scattered around the South Island as well as one overseas.

Dramatically increasing demand for the BIT degree programme coupled with changing patterns of study and increasing demand for physical accommodation has recently suggested the use of techniques already developed for geographically distributed networked learning. In particular, the application of asynchronous delivery media with the intention of making better use of classroom and laboratory space shows great promise with the acquisition of knowledge becoming an online, personalised activity.

The ever-present need to distinguish capability from promise became a common thread in developing combinations of technologies drawn from synchronous and asynchronous systems including:

- Video-conferencing with application sharing (PictureTel 4000)
- Point-to-point and multi-point data conferencing
- Text distribution and messaging systems
- Streaming, event driven multimedia
- Collaborative Web sites
- E-mail
- Text chat
- Compact disc

Productive learning environments were generally a complementary mix rather than isolated technologies with the intention of creating the closest approach to the flexibility of traditional teacher-student interaction. The Internet promised much but bandwidth and the prohibitive cost of server

licenses prevented until recently, for example, the adoption of the key technology of multi-point data conferencing.

Bandwidth is still an issue but in New Zealand has improved to the extent that the vital simultaneous data-conferencing contributors of audio communication and application sharing are now eminently usable through analogue modem connections. Nevertheless, most streaming media is still distributed on compact disc with Internet based trials being readied for the 2002 academic year. Fortunately, event-driven streaming media operates from a local file store as well as from an Internet server.

The most workable systems employ a mix of synchronous and asynchronous technologies with the Internet taking an increasingly dominant role in tandem with increasing bandwidth. It is acknowledged the lack of a high bandwidth system still handicaps the use of ip technologies and a national initiative to remedy the problem would be most welcome.

A future model of course delivery within the School replaces considerable amounts of lecture delivery with online or CD distributed multimedia material. Multi-point data conferencing is a principal focus of a new and potent, integrated online learning system which creates the essential tutorial environment. Assignments are presented and returned through platform non-specific electronic document processing systems and on-site activities reserved for some assessment and practical work.

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