



High Definition Interactive Video (HDV), transforming 'distance' seminars



High Definition Interactive Video

Extract from Monash Memo (31 July, 2008, first MURPA High Definition Seminar with Professor Larry Smarr, University of California San Diego):

'IT Faculty Hosts High Definition Video Seminar'

"Apart from a fascinating seminar, the presentation medium was also a first for Monash," said Professor David Abramson, Associate Director of the Monash e-Research Centre and ARC Professorial Fellow in the Faculty of Information Technology. "We were able to receive a high definition video stream from the UCSD

at over 140 MBits per second - which is the fastest sustained communication we have experienced to date." These speeds are a credit to both the Monash networking infrastructure, and also the international links provided by AARnet. "The definition in these videos is stunning, and provides a much richer experience than older technologies," said Professor Abramson.

(For further information on the MURPA Seminar Series contact Professor David Abramson of the Faculty of IT on ph. 990 51183, or the Monash e-Research Centre.)

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The Chancellor's column October 2008

Technology-enabled collaboration

"I have seen the future, and it is now," said Nam June Paik, the Korean artist who invented video art.

I attended a seminar held by the IT faculty in September. In all respects but one it was what you would expect. The title was suitably academic: Multi-Scale Modelling of the Heart. The content was extensive, describing computer models that ranged in scale from the microscopic proteins comprising a model of individual heart cells to electrical and mechanical models of the entire heart and torso. The models ranged in temporal scale from the microseconds required for protein reactions to the hours and days required for evolving pathologies.

The computer-generated images and animations were superb, the lecturer was unmistakably an expert. The audience was deeply attentive, all the more so because the lecturer made consistent eye contact with his audience. The lecturer, Andrew McCulloch, was clearly aware of our interest and it energised his delivery.

What made this seminar strikingly unusual, though, was the fact that Andrew McCulloch was standing at a podium in a room at the University of California in San Diego, while we were seated in an office of the Faculty of Information Technology at the Clayton campus in Victoria. McCulloch's lecture and slides were beamed to us at high-definition television resolution. At the same time, a camera at our end

sent him a continuous view of the audience in Clayton. A series of microphones at our end dangled from the ceiling like electronic stalactites to pick up questions from the audience. The sound quality was superb.

I've participated in numerous video conferences to date but nothing like this. The quality was so high that the experience was almost as if we were all in the same room. How was this achieved? By the use of an ultra high-speed communications link implemented via the Australian Academic and Research Network (AARNet). For the technically minded, this particular seminar used a bidirectional 140 megabits-per-second link.

There was nothing fundamentally different in concept about this video connection to others that have been in use for 30 years. Nevertheless, to me it was ground-breaking. Why? Because the massively increased bandwidth was transformational. Quantity beget quality.

Andrew McCulloch collaborates with Professor David Abramson (BSc(Hons) 1979, PhD 1983) at Monash. Under an existing exchange program, the University of California at San Diego sends students to do research in Australia during the northern summer break. Between visits, they rely on electronic communication to share data and to work with their co-supervisors. Soon, under a new exchange program, Monash University students will be able to spend the southern summer break in America. Similar programs are springing up between other countries.

The future is here, at least for some. High-speed communication will impact research and education. It will also have a major influence on industrial-scale collaborations in multimedia and medicine. Further, it will enable long-distance social interactions at an unprecedented level. My experience in this seminar certainly argues the case for very high-speed broadband to be made available to every Australian business and home.

I was pleased to see that Monash is pioneering the use of technology to underpin international collaborations. This is not an isolated case – seminars such as this one are sponsored by the Monash eResearch Centre. Such international collaborations are consistent with our international identity that makes us unique among universities and positions us well to provide the kind of education our students need to work in a global environment.

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