

Australia Moving Toward the Information Age Economy

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The Australian American Leadership Dialogue (AALD)

It is wonderful to be back at the Leadership Dialogue Gala Dinner in Melbourne two years after we met before. The Dialogue has nurtured a close relationship between American and Australian leadership, but it has also created a fertile framework for quickly developing new trans-pacific collaboration projects. Tonight I will illustrate how that Leadership Dialogue framework is driving us forward in the area of the emerging broadband economy and society.

Two years ago- AALD Project Link with AARNet and U Melbourne

When I spoke to the Leadership Dialogue Gala Dinner two years ago here in Melbourne there was a great debate in your country over broadband and the Federal election was in the future. I recall having pointed out that Australia's traditional physical "tyranny of distance" was exacerbated by the relatively low bandwidth internet that I was measuring from Melbourne to the United States.

I suggested a stretch goal of multiplying by 100-fold the speed of normal Internet bandwidth between research universities in Melbourne and Southern California by using the dedicated fiber optics of AARNet, Australia's research and education network. Furthermore, we should accomplish this in time for the West Coast Dialogue Meeting that would be held in January of '08 at UC San Diego. It seemed unimaginable that in only 4 months such an unprecedented jump in bandwidth could occur.

It's now history that Glyn Davis, the Vice-Chancellor of the University of Melbourne in partnership with Victoria's Premier Brumby, both of whom were in the audience and are with us tonight, took up my challenge and partnered with AARnet to, in just a few month's time, to work with our team at Calit2@UC San

Diego to create the first Australian OptIPortal tiled display wall and link it with high definition video over the AARnet gigabit per second fiber optic to the auditorium at Calit2. I don't think any of us who were present the AALD Project Link January 15, 2008 will forget the drama of the opening of the broadband link with the new deputy Prime Minister Julia Gillard, Senator Conroy, Premier Brumby and other dignitaries.

This was followed up by my spending 3 weeks in Australia during October 2008 as the Leadership Dialogue Scholar, giving lectures from Perth to Brisbane, on how research universities and CSIRO could partner with AARNet to create OptIPortals on their campuses and laboratories and link them to each other and to innovation centers around the world. As a result there are now nearly ten OptIPortals in Australia, more than any other country than the US.

The National Broadband Network-a Nation Building Innovation Platform

Six months after my lecture tour the National Broadband Network (NBN) was announced by Minister Conroy, with the government putting Fiber-to-the-Premise (FTTP) for 90% of Australia's homes and high speed wireless to the rest. The fiber will start off at 100 megabits/sec to each home, enough bandwidth to allow consumers to experience the amazing quality of video we used in the Project Link.

I believe the NBN is a truly stunning vision of nation building! Because the NBN team, which was recently announced, can learn best of breed practices from these other countries experience, I have strong confidence that Australia will build a leading edge system, which unlike other countries will provide a uniform national platform for innovation in broadband services, creating a Broadband Society.

I strongly agree with Minister Conroy that this not only will bring important improvements to people's quality of life through telemedicine and education, it also sets the stage for a new generation of Australian entrepreneurs to create companies to offer services for an open NBN. This will open up customer choice from a wide range of broadband services of an unprecedented scale in Australia. If you think how Apple's iPhone broke open the "walled garden" of wireless telephony, Australia's NBN could do the same for FTTP, establishing Australia as a leader in this crucial new component of the Information Age. And that market is

growing globally at 30% per year, with an astonishing 130 million households estimated to be FTTP connected by the end of 2013.

Tasmania has been chosen by the Federal Government for the initial deployment of the NBN. To be present at the NBN inception, I was invited to visit Tasmania by the Premier Bartlett's office and the University of Tasmania. During two intensive days earlier this week I was able to speak with leaders in the government, private sector, and universities. I found Tasmania has a good understanding of the issues surrounding NBN, that they are realistic about the work to be done, and that they have a commitment to see it through. The prospect of 200,000 households, each with a 100 million bits per second of broadband access to the world is driving Tasmania toward what the Premier terms the "Clever, Kind, and Connected Island."

But the picture for Australia gets even better when one considers the potent combination of the research universities, CSIRO, and AARNet, operating at bandwidths 100 times that of the NBN, which provide Australia with a "future proofing" for the national investment in the NBN. Essentially the connected research infrastructure provides a "pull toward the future" that allows innovative faculty, students, and staff to experiment with and invent new applications at higher bandwidth that can be reduced to practice by the time the NBN increases its bandwidth. For instance, Monash University and my Institute in UC San Diego have set up a regular remote lecture series over high definition video, which is opening up Australia to the best minds around the planet. The new Institute for Broadband-Enabled Society at the University of Melbourne will bring together a wide range of researchers and companies to explore future applications of the NBN in telemedicine, e-commerce, e-government, and social networking.

The NBN, Energy, and Global Climate Disruption

With the NBN underway, I believe Australia has a unique opportunity to take leadership on how the broadband infrastructure can help us with the greatest challenge facing our countries—global climate disruption.

I strongly believe that Australia has the opportunity to create a national scale Laboratory for the Greener Future, just as it has created with the NBN on the Broadband Society.

It is the ubiquity of the NBN that makes it an ideal national platform for using information technology and telecommunications to reduce greenhouse gases through “smart infrastructure.” Since all households and buildings will be reached by either fiber or wireless in the NBN, this sets the stage for “smart electric grid” in which sensors and actuators in the built infrastructure can be monitored and reduced in power consumption when not needed.

Similarly, the high bandwidth of the NBN means that telecommuting and business meeting videoconferencing will replace much unnecessary use of our automobiles and planes to again reduce GHG emissions.

A bit further in the future is the ability to place energy hungry data and storage centers near sources of renewable energy, such as hydro in Tasmania to solar/geothermal in central Australia.

The NBN can be a vital tool as Australia transforms itself to a low carbon society.

Next steps--Collaborations will continue to deepen between Australian and American teams under the AALD banner

During my two weeks in Australia, I have been able to either visit or speak with senior representatives of a number of the research components of Australia and found strong support for developing and deepening collaborations in the near term in areas of common interest in the U.S. and Australia, such as innovations on broadband applications, bushfires, water management, and bio-computation.

We will explore all of these at the West Coast AALD in January at UCSD and Stanford.