



Creating Hawai'i's Broadband Future

By David Lassner, PhD

Imagine high-definition interactive videoconferencing enabling you to participate in business meetings from home so you can avoid traffic and reduce your carbon footprint. Imagine your father consulting from home with his physician about early-onset Alzheimer's, with the physician able to see confusion on his face. Imagine your son uploading the high-definition video he just finished editing to submit his high school graduation capstone project. Imagine your daughter remotely operating an instructional telescope located at the top of Mauna Kea while viewing images of the data that are produced using a supercomputer on Maui.

Imagine these things going on in your home — all at once — over a high-speed broadband connection.

In Japan, Hong Kong, Sweden and France, Internet access at speeds of 100 million bits per second (Megabits or Mbps) are available to residents for about \$30 per month, or even less. That's 20 times faster than an average broadband connection in the United States and 6 times faster than the highest speed consumer service currently available in Hawai'i.

And other countries aren't standing still while the U.S. struggles to catch up. Late last year KDDI announced the rollout of residential Internet access in Japan at 1 billion bits per second (Gigabits or Gbps) for about \$60 per

month. Earlier this year the Korea Communications Commission announced plans to bring 1 Gbps service to Korean households by 2012. Last month a leading Hong Kong provider announced 100Mbps service for a new low price of \$16/month.

Hawai'i and U.S. No Longer Competitive

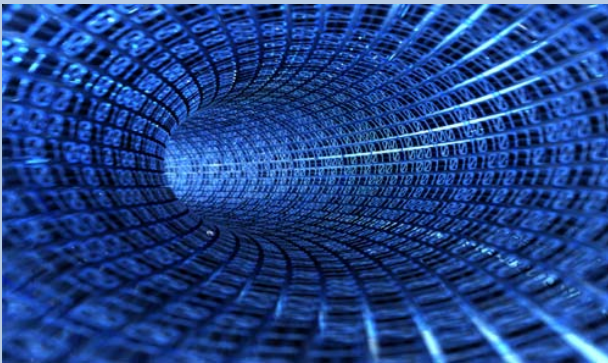
Meanwhile, the United States has dropped dramatically on the international broadband scoreboard when considering any of broadband penetration, speed and/or pricing. Bringing this story home, Hawai'i is routinely ranked near the bottom of the states in the effective speed of our Internet connections. The U.S. used to be the clear international leader, and Internet access everywhere relies on a key innovation (the Aloha protocol) that was developed at the University of Hawai'i (UH) during the 1970s. UH also implemented the very first Internet connections to Japan, Korea, Australia and New Zealand back in the early days when only universities and research labs had access, yet UH is now one of the only major research universities in the country without a dark fiber optic connection to the rest of the nation.

Estimated Economic Impact \$500M/Year

The 2007 Legislature established a Broadband Task Force with a mix of public and private sector members to consider what action might be

appropriate in Hawai'i, if any. The Task Force first asked whether broadband really matters to Hawai'i and answered with a resounding "yes." We found that transformational improvements in health care, education, public safety, entertainment, economic development and civic engagement would all be empowered through high-speed broadband.

What is broadband?



The term *broadband* commonly refers to high-speed Internet access. The FCC defines broadband service as data transmission speeds exceeding 200 kilobits per second (Kbps), or 200,000 bits per second, in at least one (downstream or upstream) direction.

Broadband service provides higher speed of data transmission allowing more content to be carried through the transmission "pipeline." Broadband transmission technologies include digital subscriber line—DSL; cable modem; fiber; wireless; satellite; and broadband over powerlines—BPL.

As a Task Force, we agreed that broadband has emerged as a critical infrastructure need in order for our entire state to thrive and prosper in the 21st century. One study estimated a positive economic impact to Hawai'i of over \$500 million per year that would be obtained through improved broadband capabilities.

The Hawai'i Broadband Task Force found that other countries have leapfrogged the United States through intentional public policy. Other

advanced nations view broadband as infrastructure to be used and to be accessed by all citizens, and have taken strong actions to improve the availability and speed of the services available in support of their national social and economic development. Though they've taken different roads to get there — using varying approaches to regulation, differing models of deploying infrastructure and their own models for public investment — they all began with the vision of broadband as critical infrastructure and public commitment to the vision. In contrast, over the past decade the U.S. has taken a fairly *laissez faire* approach to broadband, relying primarily on private investment and competitive forces to fund and deploy advanced infrastructure and services.

Visionary Policies Required

As with our nation as a whole, Hawai'i has no vision for broadband in public policy. And while we have many offices at the State and County levels with roles in regulation, franchising, permitting and oversight of the companies that provide services, there is no office or public official in Hawai'i with a mission to advance Hawai'i's broadband capability for all our communities on all our islands.

The Hawai'i Broadband Task Force presented our final report to the Legislature and Governor at the end of last year. The full report is available at: <http://www.hbtf.org>. While there are many views as to the right role for public sector engagement and exactly how to finance and build world-class infrastructure and services, there was no disagreement on the two primary recommendations.

First, the Task Force agreed that Hawai'i should embrace a bold vision that its citizenry enjoy services and prices comparable to those in the leading nations of the world.

Second, in light of severe financial constraints, the State of Hawai'i should perform a revenue-neutral integration of existing disparate but related oversight functions into a single office with responsibility to ensure streamlining of procedures and permitting, broadband advocacy, and overall leadership for achieving Hawai'i's vision of world-class infrastructure and services. The Task Force believed that without leadership, the vision alone would be a hollow statement.

Need for Legislative Action in 2010

These key recommendations of the Task Force were embraced by the Lingle Administration, the Senate Majority, the House Majority and the House Minority. Multiple bills to establish a bold vision for the State and to realign existing resources to create a new Hawai'i Communications Commission were introduced (and passed both chambers) during the 2009 Legislative Session. But the 2009 Legislature did not come to conclusion on a final bill that they could pass and send to the Governor for signature. In accord with the 2007 legislation that established it, the Hawai'i Broadband Task Force sunset out of existence June 30, 2009.

In the meantime, the new Obama administration has embraced the importance of broadband for the nation as a whole. The American Recovery and Reinvestment Act of 2009 (ARRA) contained three important provisions regarding broadband:

1) The ARRA established a new grant program for state-based data collection efforts to implement the Broadband Data Improvement Act of 2008. If successful, this will provide better data than we have ever had before about the actual state of broadband in Hawai'i and across the nation.

2) The ARRA appropriated some \$7.2 billion to be allocated nationally for broadband infrastructure and services through new grant and loan programs in the Department of Commerce and Department of Agriculture.

3) And perhaps most importantly for the long term, the ARRA charged the Federal Communications Commission (FCC) to create our nation's first national broadband strategy, with the plan due to Congress early next year.

While Hawai'i could have been poised for national leadership, we can still position ourselves well to participate in the changes afoot in Washington, D.C. Proposals were submitted for a Hawai'i broadband mapping program and to access ARRA funds for broadband infrastructure and services. It is clear that we have a strong bipartisan consensus that broadband is critical infrastructure for Hawai'i's future and we have basic agreement about some first steps that are necessary for the State to begin to move forward. At least one legislative vehicle is still alive in Conference for the 2010 Legislature to consider and pass if the House and Senate can come to agreement. Or, of course, new bills could be introduced to allow other approaches to advance.

While there are many ways our progress can be derailed, we have a real opportunity to take advantage of our consensus and begin to chart a more detailed course toward world-class broadband services for all our citizenry. Hawai'i deserves no less.

David Lassner, Vice President of Information Technology and Chief Information Officer for the University of Hawai'i, served as Chair of the Hawai'i Broadband Task Force.