

Where Are We Heading with the Hawaii Broadband Task Force?

Focusing our Conversations
with Some Personal Perspectives

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The Isolation Conundrum

Isolated populations have the greatest need for services powered by high-speed telecommunications. Yet they must often settle for the most limited capabilities at the highest costs.

Hawaii Broadband Task Force Vision

Hawaii understands that advanced broadband services are an essential infrastructure for an innovation economy and a knowledge society in the 21st century. As a result of proactive policy initiatives, Hawaii residents and businesses throughout the State have access to advanced broadband services of the caliber and at the pricing available in the leading developed nations of the world.

How Much Broadband Do We Need?

- ◆ High Definition TV: Streaming and Downloading
- ◆ Telehealth with High-Definition Imaging
- ◆ Telework with Real-Time High Definition Collaboration
- ◆ High Definition Distance Learning
- ◆ Collaborative Video Production -- Global
- ◆ e-Democracy Reaching All Islands
- ◆ Low-Impact Astronomy
- ◆ Ocean Observatories
- ◆ Scientific Research
- ◆ IT- & Telecom-based Innovation
- ◆ ... An Evolution from Physical Tourism to the Holodeck?

Now, imagine all this in one home/office – at once!

Hawaii's Networks

- ◆ Vibrant Duopoly
 - ◆ Hawaiian Telcom
 - ◆ Independent (troubled?) incumbent carrier
 - ◆ Extensive DSL Coverage
 - ◆ Video Franchise Pending
 - ◆ Oceanic Cable
 - ◆ Extensive Cable Modem Coverage
 - ◆ Isolated/rural areas underserved by both
- ◆ Other Facilities-Based Players
 - ◆ Sandwich Isles Communication
 - ◆ Focused on services to Hawaiian Homelands
 - ◆ \$500m in RUS loans, to be repaid via USF
 - ◆ PLNI
 - ◆ twtelecom
- ◆ Wireless
 - ◆ AT&T, Sprint, Verizon 3G in populated areas
 - ◆ Clearwire rolling out
- ◆ Hawaii has lost our role as fiber cross-roads of the Pacific
 - ◆ Advances in engineering (just like planes)
 - ◆ Reputation as difficult to deal with permitting

How Does that Add Up?

- ◆ Duplicative 90s infrastructure positions Hawaii well --- for the 90s
 - ◆ Nearly all homes can get “current” service for ~ \$40-45/mo
 - ◆ Not ready for global competitiveness
- ◆ Duopoly not conducive to individual transformational investment
- ◆ U.S. regulatory structure not conducive to shared investment

Hawaii's Additional Barriers

- ◆ Need 2500 miles of submarine fiber optic cable to get anywhere else
 - ◆ Hawaii not perceived as “friendly” to new cables that would increase global connectedness
- ◆ Population dispersed on 6 different islands
- ◆ Mountains on each island

Environmental Scan: Summary

- ◆ Broadband is essential in the 21st century
 - ◆ Health, education, public safety, cultural preservation, economic development
- ◆ Hawaii is doing ok relative to other States, but not compared to other countries and not when compared to leading communities
- ◆ We're all hampered by the (lack of) federal broadband policy relative to other countries
 - ◆ Federal epiphany is not imminent, although there's movement in the right direction
- ◆ Wide range of initiatives at the community and state level in other place
 - ◆ Most of these are too new for us to understand which are most effective in what settings

Personal Observations

- ◆ Need to recognize that providers are economic agents that behave in accord with the market structures and regulatory environment, which are the result of public policy
- ◆ The countries and communities that have advanced have done so through intentional public policy
 - ◆ Pervasive advanced low-cost services don't just happen
 - ◆ (We don't leave it to "the market" to build roads, sewers, or water systems)
- ◆ Competitive access to shared infrastructure is a common element of success; Otherwise consumers pay for multiple duplicate infrastructures
 - ◆ Unbundling failed in the U.S.; Sharing is an "unnatural act"
- ◆ Need to understand and stimulate demand as well as supply
 - ◆ Government can lead by example

Two Ways to Get to Shared Infrastructure

- ◆ (Re-)regulate what was built with public subsidies & support
 - ◆ Japan, France, Germany
- ◆ Build new shared facilities
 - ◆ Singapore & Australia
 - ◆ Canadian “condominium networks”
 - ◆ Loma Linda and many U.S. municipal/regional initiatives

Ideas on Moving Forward

- ◆ Per Wayne Gretzky (“I skate to where the puck is going to be”): Aim for 100Mbps ... **and beyond**
- ◆ It’s not about wired vs. wireless, but wired (fiber) AND wireless
- ◆ Rural areas will always lag, but a rising tide raises all boats
- ◆ Upstream bandwidth matters too, especially in rural areas
- ◆ Research & education as demand drivers, guinea pigs and exemplars
- ◆ Government must invest in demand (applications) & infrastructure
- ◆ Maximizing access to next-gen submarine fiber is critical for Hawaii
- ◆ Thoughtful Building Codes and standards for developers can drive shared infrastructure and competitive architectures
- ◆ We need a consolidated expert regulator with a policy agenda
- ◆ Ongoing data and mapping of supply and uptake will be critical
- ◆ Interest in undergrounding of utilities may synergize with approaches to shared infrastructure investment for next gen networks (FTTH)
- ◆ There’s a continuing role for a task force to bring together diverse views and advise expert regulator

Some Specific Recommendations

- ◆ Outreach to help public and policymakers understand that:
 - ◆ Broadband will be essential to our social, economic, educational and cultural future
 - ◆ It won't just happen without intentional public policy and investment
- ◆ Stimulate demand for advanced applications of broadband
 - ◆ Need to find ways to invest in capabilities for advanced research & education
 - ◆ Policy initiatives in support of telework & telehealth
 - ◆ Other key initiatives?
- ◆ Create a privately-managed shared open-access submarine cable landing station on Oahu
- ◆ Create a consolidated proactive expert telecom regulatory agency with responsibility to:
 - ◆ Ensure ongoing data and mapping of broadband supply and uptake
 - ◆ Continue to advance capabilities in rural areas that need it most, while recognizing that we won't be equal in all places at all times
 - ◆ Consider approaches to shared next-gen fiber, perhaps through synergies with initiatives for undergrounding of all utilities
 - ◆ Convene ongoing advisory council
- ◆ Implement telecom requirements in Building Codes and Development Standards to advance broadband infrastructure for the long term