Global Forum Malmo 2004

Broadband – A US and OECD view

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The Global View

- The US has 5% of the world's population, but accounts for 1/3 of world economic production
- 3 billion people have joined the world economy in the last 10 years
- A regulatory climate that fosters investment is an essential part of a country's ability to compete. As articulated by Chairman Powell earlier this year:

  "*If we do not create a regulatory climate that attracts and encourages investment in our states and in our Nation, we will face the rude reality that opportunity can and will go elsewhere. If the regulatory climate is hostile, the information age jobs go to India not Appalachia. If regulatory costs are excessive, email, voice and video servers will be set up in China not California. Unlike the earth-bound networks and businesses of the past, there is nothing I, or you, can do to keep economic activity in your state. " (Washington, DC March 10, 2004)*

The President's Broadband Vision

Goal

"This country needs a national goal for broadband technology . . . universal, affordable access for broadband technology by 2007."

– President George W. Bush, Albuquerque, NM, March 26, 2004

Government's Role

"The role of government is not to create wealth; the role of our government is to create an environment in which the entrepreneur can flourish, in which minds can expand, in which technologies can reach new frontiers."

– President George W. Bush, Technology Agenda, November, 2002.

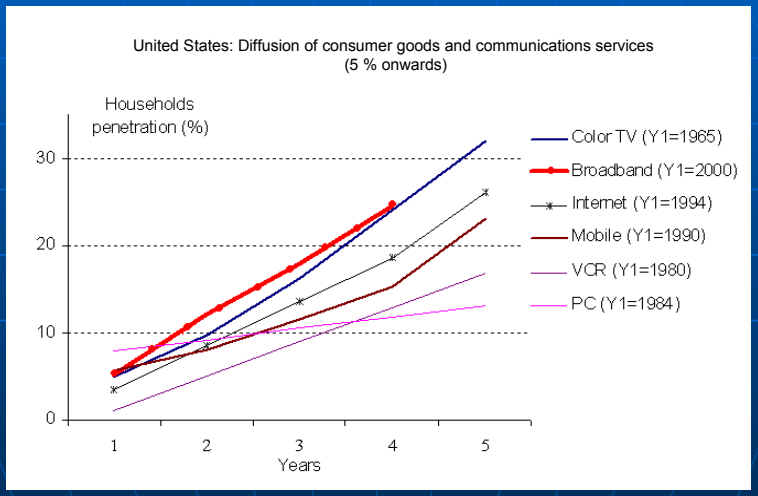
Creating Economic Conditions For Broadband Deployment

"We ought not to tax access to broadband. If you want something to flourish, don't tax it."

– President George W. Bush in Baltimore, Maryland on April 27, 2004

- Tax relief has given businesses powerful incentives to invest in broadband technology
  - Accelerated depreciation for capital-intensive equipment
  - Extension of the Internet tax moratorium; support making the moratorium permanent
  - Extension of the research and experimentation tax credit; support making it permanent
  - President's FY 2005 budget requests a record $132 billion for research and development.

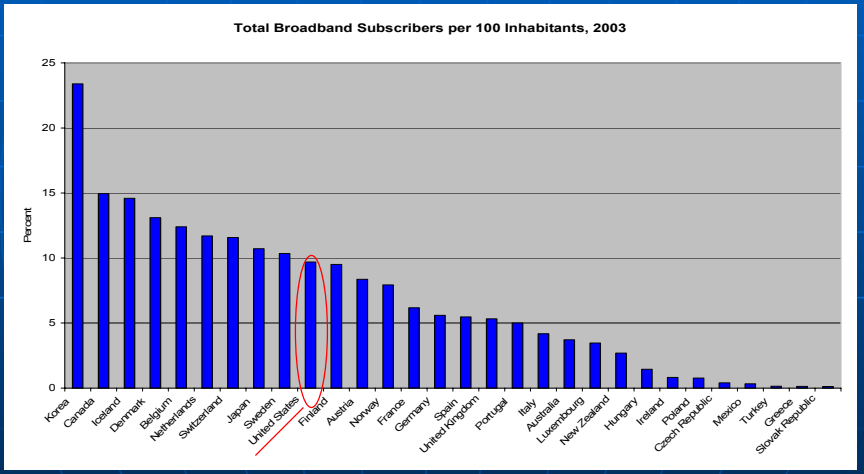
Rate of Broadband's Diffusion in the U.S. is Strong



Source: OECD, 2003

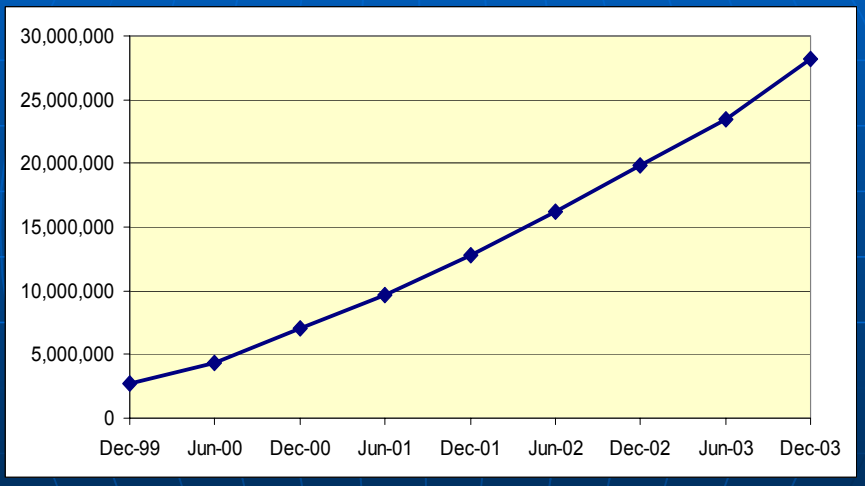
But, it Needs to Be Stronger…

December 2003



Source: OECD

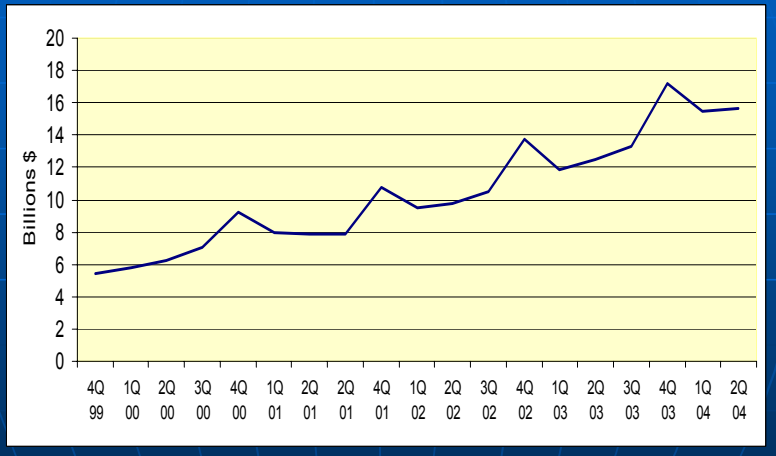
Total High Speed Lines in the U.S.



Source: FCC, 2004

The Growth of E-Commerce in the U.S.

Estimated Quarterly U.S. Retail E-commerce Sales:
4th Quarter 1999 – 2nd Quarter 2004



Source: U.S. Census Bureau, 2004

Wireless Broadband and New Technologies

"The other promising new broadband technology is wireless. The spectrum that allows for wireless technology is a limited resource . . . [a]nd a wise use of that spectrum is to help our economy grow, and help with the quality of life of our people."

- President George W. Bush, U.S. Department of Commerce, June 24, 2004

The Administration has made more radio spectrum available for wireless broadband technologies:

- Advanced Wireless Services ("3G")
- Ultra-wideband
- 5 GHz Spectrum
- 70/80/90 GHz

Wi-Fi Hot Spots

- There are over 20,000 hotspots in the United States. (Intel's Hotspot Finder)
- City and County-wide hot spots:
  - Walla Walla County, WA
  - Spokane, WA
  - Cerritos, CA
  - Chaska, MN
  - Athens, GA
- Some Communities developing major free hot spots:
  - Long Beach, CA
  - San Jose, CA
  - Washington, DC
  - New York, NY
  - Austin, TX
  - Las Vegas, NV
- WiMax is coming Fast

WiMax

- WiMax or 802.16 is designed to provide wireless broadband access in a Metropolitan Area Network (MAN), operating at speeds up to 75 Mbps over a 30 mile radius.
- WiMax connectivity is fast enough to support more than 60 businesses with T1-level connections and hundreds of homes with DSL-rate connectivity using only 20 MHz of channel bandwidth.
- Intel plans to build WiMax into its Centrino chip platforms, which power 80% of all PCs, by 2006. Motorola plans to commercially offer integrated radio access networks that can handle 3G, Wi-Fi, WiMax and other future wireless innovations. AT&T, Siemens, and Alcatel are also backing WiMax technology.
- Industry analysts predict six-fold growth in WiMax sales over the next three years.

Broadband Over Power Lines: The Third Wire

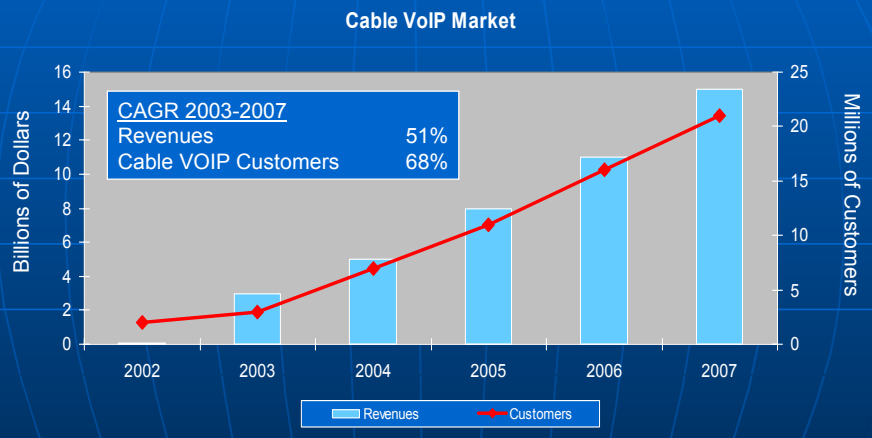
"We need to get broadband to more Americans . . . one great opportunity is to spread broadband throughout America via our power lines."

— President George W. Bush, US Department of Commerce, June 24, 2004

- Principal concern is the risk that BPL systems might interfere with federal government radio communications or other state and private radio operators.
- FCC began BPL rulemaking on February 12, 2004.
- On April 27, 2004, NTIA submitted to the FCC a Phase 1 interference report, which suggested interference mitigation techniques to protect critical government radio systems.
- On June 4, 2004, based on additional analyses, NTIA recommended several supplements to the FCC proposed BPL rules to reduce further any risk of harmful BPL interference

HomePlug Modem can turn an electrical outlet into an Internet connection.

VoIP and Other IP Applications Will Continue to Change the Market



Source: Kaufman Brothers, "A General Flavor of Mild Decay," July 14, 2003

ENUM and IPv6 Will Enable New IP Capabilities

- ENUM promises true convergence by facilitating the integration of telephone numbers and IP addresses, providing a foundation for development and deployment of new Internet-based communications devices and applications
- IPv6 developed during 1990's as replacement for existing Internet Protocol version 4 (IPv4)
- Enhanced capabilities of IPv6 as compared to IPv4 would:
  - Exponentially increase the number of available Internet addresses
  - Enable the proliferation of enhanced mobile services/applications
  - Increase Security

OECD Work On Broadband

- 30 Countries participate in the OECD's Information, Computing and Communications Policy Committee which has working groups on telecom and info services, privacy and security, impact of the information economy, information society statistics, and cooperation against SPAM.
- See www.oecd.org for significant work done by the OECD ICCP Committee and its working group on broadband including comparative statistics, survey papers on market developments and related issues (USO, pricing, SME issues, rural, VOIP, NGN) and government and private sector presentations from recent workshops.