

Law Seminars International

Top Priorities for 2005: Insights from the Department of Commerce and the FCC

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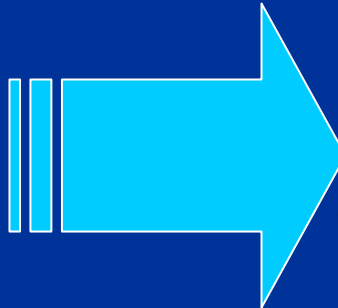
U.S. Department of Commerce
www.ntia.doc.gov

Seattle, Washington
May 20, 2005

Since the Enactment of the Telecom Act in 1996 America Has Embraced the Future

Then...

Wireless Revenues \$23.6 billion
Wireless Subscribers 44 million
Wireline Households 101 million
E-Commerce Revenue (not measured by DOC prior to 1999)
U.S. Broadband Lines 0



Now

Wireless Revenues \$102.1 billion (2004)
Wireless Subscribers 182.1 million (5/05)
Wireline Households 106.5 million (7/04)
E-Commerce Revenue \$21.4 billion (4Q04)
U.S. Broadband Lines 35.8 million (LRG, 5/05)

Spectrum Policy

**STOCK
ANALYSTS**
THE PRESSURE TO SAY 'BUY'
PAGE 54

▶ ASEA'S GLOBAL PUSH ▶ WILL ABC PASS NBC? ▶ XEROX' STRATEGY

BusinessWeek

JULY 23, 1990

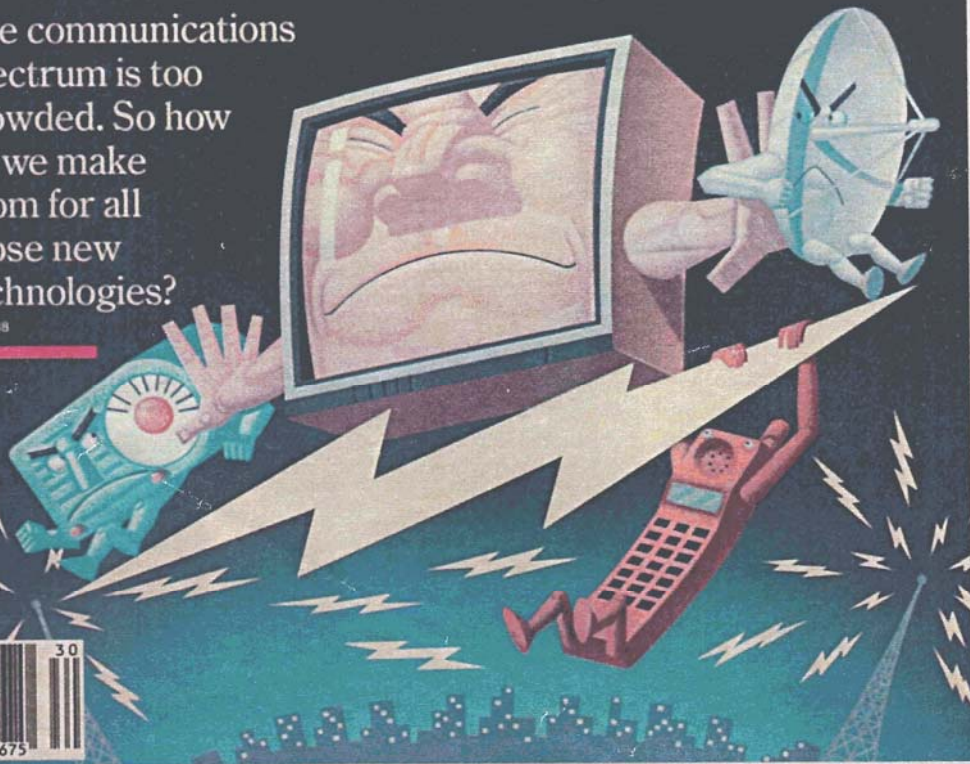
A MCGRAW-HILL PUBLICATION

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AIRWAVE WARS

The communications spectrum is too crowded. So how do we make room for all those new technologies?

PAGE 48



Cover story
July 23, 1990

President's Spectrum Policy Initiative

“The existing legal and policy framework for spectrum management has not kept pace with the dramatic changes in technology and spectrum use.”

- President George W. Bush, Presidential Memorandum, May 29, 2003

- 1. President's Executive Memorandum (June 2003)**
- 2. Two Reports from the Secretary of Commerce to the President (June 2004)**
- 3. President's Direction (November 2004)**
- 4. Secretary of Commerce Implementation Plan (May 2005)**
- 5. Changing Spectrum Management (May 2005 – November 2011)**

The President's Broadband Goal and New Technologies

New Technologies Enabling Broadband Deployment

- **Wi-Fi** (802.11) – Wi-Fi NICs (network interface connectors) are readily available for less than \$50, and InStat/MDR predicts that 95% of laptops will have Wi-Fi as a standard feature by 2005.
- **WiMAX** (802.16) – is designed to provide wireless broadband access in a Metropolitan Area Network (MAN). Intel plans to build WiMax into its Centrino chip platforms, which power 80% of all PCs, by 2006.
- **Wireless Mesh Networks** – flexible network structures linking nodes on an ad hoc basis; adaptable to many different applications and markets.
- **Broadband Over Power Lines** – BPL has the potential to emerge as a “third wire” competitor to cable and DSL broadband services.



Assistant Secretary Michael Gallagher demonstrates BPL to President George W. Bush at the Dept. of Commerce on June 24, 2004.

Video Phones: Becoming a Reality

Then...



Bell System (AT&T/Western Electric) Picturephone Model I version - From the 1965 "The Telephone Story" poster (Source: Bell Labs "Record" magazine, May/June 1969)

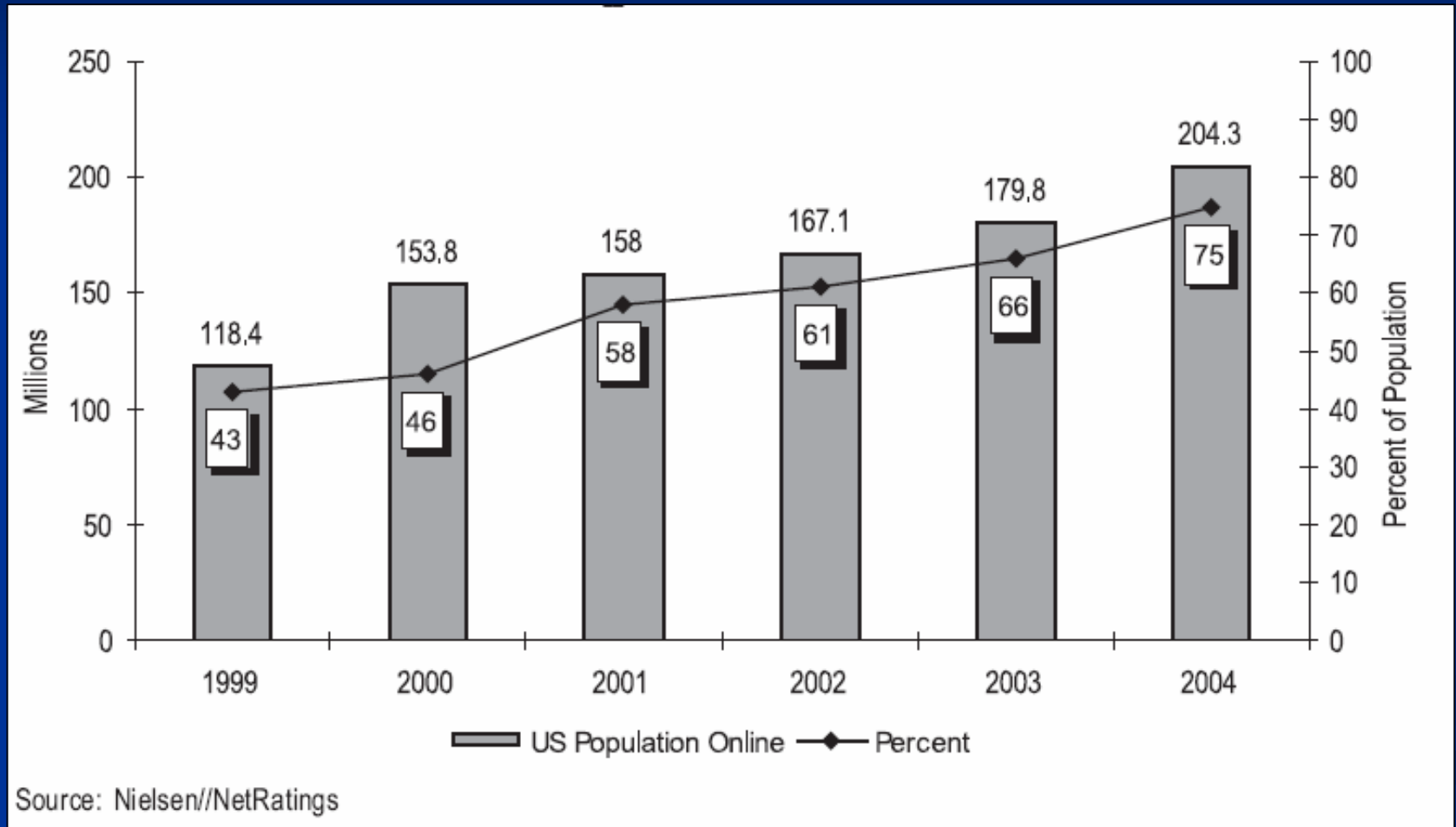
Now



President George W. Bush and Assistant Secretary Michael Gallagher making a call with an Ojo videophone (Source: U.S. Department of Commerce, 6/24/04)

- AT&T first introduced the Picturephone at the 1964 World's Fair, but price and quality prevented the Picturephone from taking off.
- IP platform, TV-quality images and lower costs may finally make videophone service commercially viable.
- More VoIP providers are offering videophone service.
- Sales of video-calling equipment reached \$40 million in 2004, up 23% from 2003.

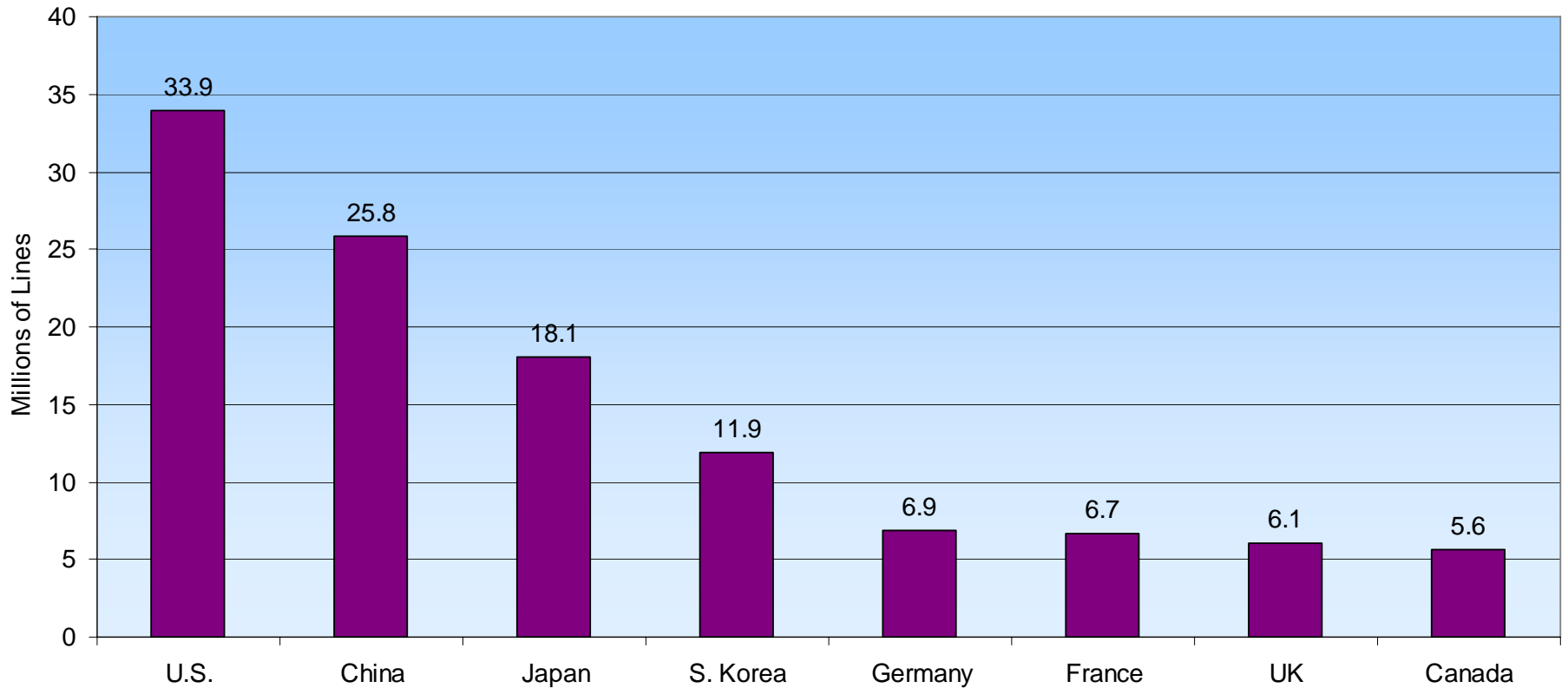
U.S. Population Online



Source: PFF, The Digital Economy Fact Book, Sixth Edition 2004

Largest Broadband Markets in the World

By Number of Lines



Source: Point Topic, March 31, 2005 (Jun. 30, 2004 – Dec. 31, 2004).



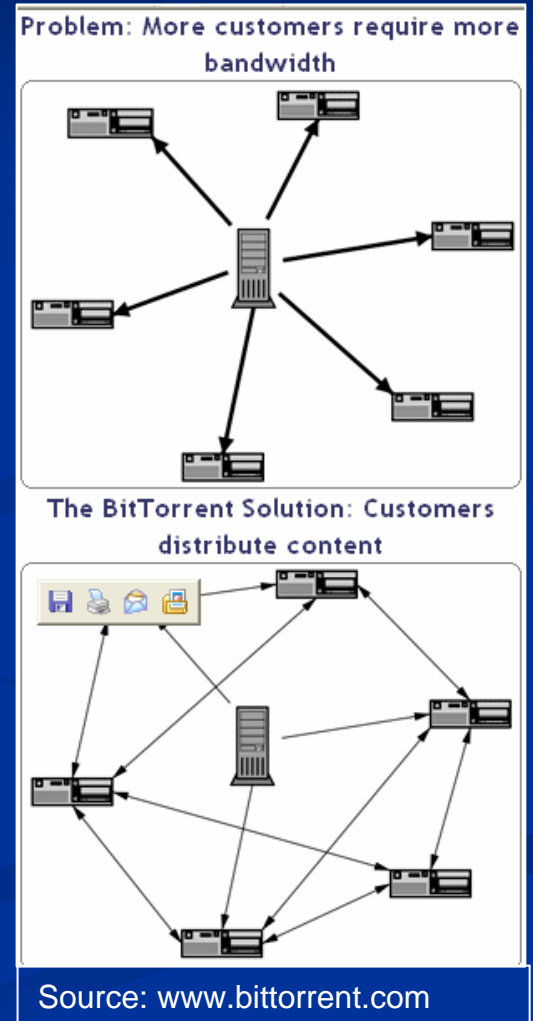
- Mobile Ad Hoc Networks or MANETs provide “multi-hop” communication among autonomous nodes (such as PDAs, cellphones), creating a low-power network at a disaster site.
- Each node acts as a source, relay point or destination, and can extend the range of radios in large buildings – when users arrive on the scene and activate a communications device, the network self-organizes and establishes a stream of communication.
- Using wireless technology developed by Seattle-based CoCo Communications, Franklin High School (Seattle school district) is the first installation in the nation of the National School Protection Network.
 - A voice, video and data connection is established between the school, law enforcement and other aid to provide greater on-scene visibility and allow first responders to make more informed decisions in the event of an emergency.
 - CoCo’s software seamlessly connects COTS equipment such as PDAs, laptops, radios and cameras via wireless nodes.



- Clearwire, based in Kirkland, WA, provides wireless broadband Internet access through a state-of-the-art wireless modem that can be plugged into a desktop computer, a laptop, or a local network.
- Clearwire operates by transmitting signals to and from nearby cellular towers instead of using a traditional phone line.
- Current connection speeds are 1.5 Mbps – 25 times faster than dial-up.
- Service currently offered in:
 - Daytona Beach, FL
 - Jacksonville, FL
 - St. Cloud, MN
 - Abilene, TX
- Coming soon to:
 - Medford, OR
 - Modesto, CA
 - Stockton, CA



- BitTorrent is a free peer-to-peer program that allows users to quickly upload and download large amounts of data, such as video games and movie.
- CacheLogic estimates that 1/3 of data sent across the Internet is BitTorrent traffic.
- To date, more than 20 million have downloaded BitTorrent – an estimated 40 million will have downloaded BitTorrent by 2006.*
- In contrast to traditional peer-to-peer networks (ie. KaZaA), each user uploads and downloads pieces of data until users have shared all of the pieces, creating their own complete source. Traditional peer-to-peer allow only one user at a time to upload/download a file, even when multiple users have the same file.



* Source: "The BitTorrent Effect", *Wired Magazine*, January 2005

The Global Market

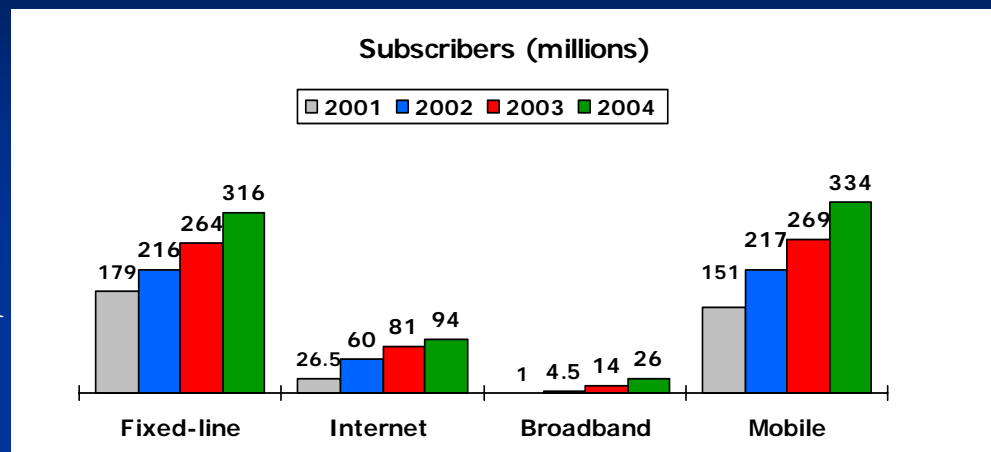
Opportunities for International Trade and U.S. Job Growth

- *“In the last ten years, 3 billion people have joined the world economy.”*
 - Craig Barrett, CEO Intel Corporation
- The number of international calling minutes in the U.S. has grown from 1.6 billion in 1980 to 36 billion in 2002.*
- Wireless broadband expansion married to VoIP creates great opportunity to reach vast markets in China, India, and other emerging markets.
- Mobile subscribers are 51 percent of all telephone subscribers worldwide (ITU 2003).
 - 1.34 billion GSM subscribers worldwide (GSM Ass’n 5/05)
 - Over 240 million CDMA subscribers worldwide (CDG 12/04)
- Commerce supports adoption of the ATSC Digital Television Standard as the hemispheric standard for DTV.
 - The governments of the United States, Canada, Mexico have all adopted the standard.
 - Adoption of ATSC standard as the common standard in the Western Hemisphere is projected to generate \$8 billion worth of U.S. exports and the creation of up to 156,000 new domestic jobs by 2014.
- HSPDA, a faster version of 3G (WCDMA) is expected to reach the mass market in 2006 → launching first in the United States, followed by Japan, then Europe.

*Source: FCC, “Trends in the International Telecommunications Industry”, July 2004.

America's Telecom Trade with China

- China has the world's largest landline and mobile telecom networks.
- China plans to inject \$500 billion between 2001-2005 into its telecom infrastructure.



Source: MII, TIA, USITO

- China's telecom equipment market, (\$20 billion estimated worth) is among the world's largest. U.S. exports comprise only \$630 million of that total, leaving ample room for expansion.
- MII expects the number of fixed line telephone users to reach 361 million (27.6% penetration) by the end of 2005 and the number of cellular users to reach 392 million (30% penetration). With such an investment, Chinese telecom carriers expect to generate revenues of \$76.5 billion, 10.4% more than that in 2004.

India: Market Expansion



- 1.08 billion people = world's largest democracy ¹
300 million people = world's largest middle class ²
- Currently over 75,000 Indian students educated in U.S., most in masters or PhD programs ³
- Long-standing history and partnership - High Technology Cooperation Group
- Strong growth in the mobile sector - India recorded the highest annual mobile subscriber growth (over 100%) from the 2nd quarter 2003 onwards ⁴
- Broadband and internet growth a priority for government - Government of India has set a minimum goal of 20 million broadband subscribers and 40 million Internet subscribers by 2010
- Policy changes signal new telecoms investment climate:
 - Access Deficit Charge (ADC) reduced 23-53%
 - Foreign Direct Investment (FDI) limit raised from 49% to 74%

¹ The World Factbook 2004 (updated Feb. 10, 2005)

² UC Santa Cruz, <http://humwww.ucsc.edu>

³ Business-Standard.com , June 28, 2004

⁴ Telecom Regulatory Authority of India press release, November, 8, 2004

Russia and Eastern Europe: Shifting Investment Landscapes

■ Russia

- \$33 billion in investment needed in next ten years
- Market for IP Telephony expected to reach \$200 million in 2004
- Mobile penetration almost twice that of fixed-line telephony, and growing at 104% annually
- Internet and broadband growth limited by inadequate infrastructure

■ Eastern Europe

- 35% mobile penetration in Eastern Europe, but varies greatly country-by-country
- Economic growth in Eastern Europe is around 6% - more than double the rate of Western Europe