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A vertical collage of images on the left side of the page. At the top is a close-up of a wooden gavel. Below it is a night-time photograph of a city skyline with several skyscrapers illuminated. In the foreground of the city photo, there are construction elements: a red and white traffic cone, a concrete barrier, and a piece of heavy machinery. The bottom of the collage is a solid blue horizontal band.

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The FCC's Third Broadband Report to Congress

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January marked a true Internet access milestone: Americans, between work and home, spent more time online with broadband connections than with narrowband, with 51 percent of total hours of use racked up in the fast lane. Reaching this cross point required a 63.6 percent jump in broadband minutes during 2001, while narrowband usage actually declined, by 3.5 percent.¹ Much of this is due to business use, where broadband hares outnumber narrowband turtles—the numbers were roughly even a year earlier. Broadband access now reaches 83 percent of the office Internet population.²

The import of Nielsen's findings can hardly be more clear, and comport with intuition as well: faster connections stimulate online use. That noted, a recent study from the Pew Internet and American Life Project finds that between March 2000 and March 2001 the average online session fell from 90 to 83 minutes. The share of users who said that Internet use helps them "a lot" in learning fell from 50 to 39 percent.³

The broadband usage milestone was reached six years after passage of the Telecom Act in 1996, and around the time that the Federal Communications Commission (FCC) issued its third report to Congress on the state of the broadband marketplace.⁴ The latest edition finds, as did its two predecessors, that broadband deployment proceeds at a "reasonable and timely" pace.⁵ Published the same month as the Commerce Department's portrait of online access, the FCC's neatly complements the work of Commerce. Highlights follow.

The report divides the network into four segments: (1) long haul—between points-of-presence delimiting the boundary between inter-exchange service and local distribution networks; (2) middle mile—inter-office plant

connecting last mile to long haul; (3) last mile; (4) last 100 feet—which includes in-house and on-premises wiring.⁶ The FCC draws a distinction between high-speed and advanced services, defining "advanced" as 200 kilobits-per-second capability for both downstream (network-to-user) and upstream (user-to-network) transport⁷; nearly all lines are classified by the FCC's being both. Its survey covers residential and business lines, but does not include private lines of internal corporate networks (typically, Intranets), and thus business usage is understated considerably.⁸

Location and Income

Geographic diffusion is wide. At least one high-speed subscriber is present in all 50 states, the District of Columbia, Puerto Rico and the Virgin Islands; coverage extends to 78 percent of nationwide ZIP codes (up from 60 percent two years ago⁹); subscribers range from California's 1.7 million to less than 15,000 in four states, from as many as 20 providers in 12 states to as few as one or two in a handful of states. Multiple providers existed in 58 percent of the ZIP codes as of June 2001, versus 34 percent 18 months earlier.¹⁰

Rural ZIP code access during that same period nearly doubled, from 19.9 to 36.8 percent, compared to 96.1 to 98.1 percent growth for the densest ZIP codes and a 24 percent growth for middle ZIP codes.¹¹ Penetration in Indian and tribal areas stands at 71 percent of ZIP codes, or roughly 90 percent of the national figure.¹²

Income also matters. Top echelon (by decile) ZIP code penetration rose slightly, to 96 from 91 percent, whereas the bottom tier rose from 42 to 59 percent.¹³ As of September 2001, 16.6 percent of household at the \$15,000 or less annual income level has broadband, versus 25.1 percent of those at or over \$75,000.¹⁴

Battle of the Broadband Battalions

Figures for DSL and cable modem service deployment reflect the FCC's tally of 107 million residential households and the nation's 4 million small businesses (one to four employees).¹⁵ As of June 2001 high-speed subscribership rose to 7.8 million—5 million cable, 2.5 million DSL and 300,000 satellite.¹⁶ DSL growth outstripped cable subscribership over the 18 months ending in June 2001, by 683 percent to 261 percent.¹⁷ But only 37 percent of DSL upstream speeds reach the FCC's 200 kb/s "advanced services" benchmark.¹⁸ A minuscule 0.2 percent of DSL lines meet the FCC's 2 Mb/s bi-directional yardstick.¹⁹ Capital expenditures for DSL have slowed.²⁰

Large business lines rose during the same period to 1.8 million, up 80 percent.²¹ However, large business service composition differs radically from that of residential and small business. Only two percent of large users took DSL, with some 55 percent taking cable and 43 percent other media including not only satellite but also optical fiber.²² Fiber accounted for a diminishing share of high-speed lines, 5 percent, down from 11 percent at year-end 1999.²³ But connection speeds are more theoretical than real: only 0.3 percent of cable modems capable of 2 megabits per second actually deliver service at that speed.²⁴ Fiber lines totaled 460,000, with all qualifying as "advanced" under FCC definition and 26 percent hitting a bi-directional 2 Mb/s.²⁵ Only 0.6 percent of fiber lines serves residences.²⁶

DSL availability estimates run on the order of 45-50 percent—one estimate has 70 percent of central office equipped for DSL, but with one-third of those lines unfit for actual service due to distance/technical limits.²⁷ New technology may expand the potential subscriber uni-

verse: a company named GoDigital Networks has developed an extender that it claims can deliver 1.5 Mb/s downstream and 384 kb/s on the upstream return channel over 25 miles (equals 132,000 feet); with four customers per extension the cost per port runs \$600 to \$900.²⁸ Another firm, 2Wire, is offering loop extender line cards that, spaced at 6,000 foot intervals, aims to enable 5.8 Mb/s (downstream) over 24,000 feet.²⁹ The new international standard G.SHDSL—Symmetric High-Bit-Rate DSL—is supposed to offer a bi-directional 2.3 Mb/s over nearly twice the current 18,000 foot DSL benchmark.³⁰

Fixed wireless services currently reach no more than 100,000 to 200,000 subscribers, but 2005 estimates of penetration are in the low millions.³¹ Mobile wireless rides on the fortunes of 3G, for which international standards specifies 2 Mb/s indoors, 384 kb/s for pedestrians and 144 kb/s for vehicles.³²

OECD figures show the US trailing South Korea, Canada and Sweden, but the OECD defines broadband access to include upstream speeds as low as 64 kb/s, precluding serious comparison.³³ Based upon that definition, South Korea projects that by 2005 84 percent of households will have 20 Mb/s access (92 percent are within the reach of DSL today, because most South Koreans live in apartment buildings).³⁴ Sweden projects 98 percent coverage by 2004-2005.³⁵

Broadband, Broadband, Wherefore Art Thou??

Predictions of the number of online broadband users made by various firms are scattered over the lot. But at least equally important, if not more so, is to what kind of use broadband connections will be put. McKinsey & Co. forecasts that in 2005 the average household will download 70 megabytes of files and 20 minutes of streaming per day, plus a monthly average of three two-hour movies.³⁶ Other analysts estimate that video-on-demand will reach 60 percent of cable subscribers in 2005 and generate nearly \$2 billion in revenues (Morgan Stanley), and that video-on-demand subscribers will mushroom from 17,000 in 2001 to 365,000 in 2006.³⁷ Price is a key determinant: According to Strategis Group, if monthly access cost fell from \$40 to \$25, broadband subscribership would jump from 12 to 30 percent.³⁷

So, solid numbers to date, with impressive geographic and income coverage. But a sluggish recovery, slow regulatory reform and a deepening telecom sector recession augur for slower broadband growth in the next few years. Regulatory reform—liberalizing confiscatory regulation on the Bells, plus more general economic incentives to invest, can accelerate broadband deployment and, consequently, American economic growth. Without it, look for a pessimistic fourth report from the FCC to Congress in two years.

[ET CETERA]

Send in the clowns. Airport (in)security continues to amaze. The latest federal audit shows no improvement in performance of airport security personnel since 9/11.³⁸ In Fresno the director of airport security has been suspended for bypassing passenger screening—on the way to Washington for an FAA meeting, no less; and (naturally) innocent passengers were re-screened as a result.³⁹ And in the city of Golden Gate fame, 25 airport security officials were arrested for concealing felony records on applications, and falsifying social security numbers.⁴⁰

Luck be a Commie tonight. Anything must be considered possible, now that ... NORTH Korea (NOT a misprint) has formed a joint venture with its Southern neighbors to run ... an Internet online lottery! Winners can get up to \$5,000, playing with virtual gambling cards. The event coincides with a May 2002 festival in the North.⁴¹

Great expectations. At home, Michigan Governor John Engler signed a trio of state bills providing for unprecedented state government subsidies to accelerate broadband deployment: (1) statewide rights-of-way fees to be curbed and permits expedited; (2) tax credits for new broadband infrastructure, including a dollar-for-dollar credit for right-of-way fees; (3) a broadband finance authority that will offer low-interest loans to extend broadband access to remote areas. Anticipated economic benefits over the next decade are 500,000 new jobs and \$440 billion GDP.⁴²

¹ “Broadband Net Surfing Accounts for More Than Half of All Time Spent Online,” Nielsen/NetRatings, Mar. 5, 2002. Broadband usage jumped from 727 million hours in January 2001 to 1.19 billion in January 2002; narrowband hours fell from 1.18 to 1.14 billion.

² *Id.* In January 2001 business broadband users trailed narrowband users, 18.0 to 19.3 million; a year later business speedsters were way ahead, 25.5 million to 15.0 million. Business narrowband uses thus fell 23 percent in a single year, while broadband increased by 42 percent. The home broadband audience measured by the A.C. Nielsen subsidiary increased 67 percent, while narrowband fell 6 percent.

³ “As the Web Matures, Fun is Hard to Find,” *New York Times*, Mar. 28, 2002. < <http://www.nytimes.com/2002/03/28/technology/circuits/28WEBB.html?ex=1017982800&en=4fb1e77d45a5252b&ei=5006&partner=ALTAVISTA> >

⁴ *In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to section 706 of the Telecommunications Act of 1996*, CC Docket 98-146, THIRD REPORT, adopted Feb. 6, 2002.

⁵ *Id.*, para. 1.

⁶ *Id.*, paras. 15-16.

⁷ *Id.*, para. 11.

⁸ *Id.*, para. 94.

⁹ *Id.*, para. 105.

¹⁰ *Id.*, para. 27-29.

¹¹ *Id.*, para. 36 and fn. 83. Middle ZIP codes are those in deciles 5 and 6. See Appendix C, Table 11.

¹¹ *Id.*, para. 40.

¹² *Id.*, para. 38 and Appendix C, Table 12.

¹³ *Id.*, para. 102.

¹⁴ *Id.*, fn. 72.

¹⁵ *Id.*, fn. 69.

¹⁶ *Id.*, fn. 70. From end-1999 to June 2001 DSL lines grew from 400,000 to 2.7 million. *Id.*, para. 49.

¹⁷ *Id.*, para. 49.

¹⁸ *Id.*, para. 50.

¹⁹ *Id.*, para. 106.

²⁰ *Id.*, para. 31.

²¹ *Id.*, fn. 76. Put another way, 92 percent of DSL users were residential/small business. *Id.*, para. 50.

²² *Id.*, para. 48.

²³ *Id.*, para. 47.

²⁴ *Id.*, para. 54.

²⁵ *Id.*

²⁶ *Id.*, para. 51 and fn. 111.

²⁷ *Id.*, para. 83.

²⁸ *Id.*

²⁹ *Id.*, para. 84.

³⁰ One estimate is 2 million, another is 4.7 million. *Id.*, para. 72.

³¹ *Id.*, para. 80.

³² *Id.*, para. 126.

³³ *Id.*, para. 127.

³⁴ *Id.*, para. 129.

³⁵ *Id.*, para. 64.

³⁶ *Id.*, para. 67.

³⁷ *Id.*, para. 121.

³⁸ “Tests Show No Screening Improvements Post-September 11,” *USA Today*, p. 4A (no date given). < <http://www.usatoday.com/usatoday/20020325/3966489s.htm> >

³⁹ “Fresno, Calif., Airport Chief Suspended for Evading Security Before Boarding Airline Flight,” AP, Mar. 25, 2002. < <http://ap.tbo.com/ap/breaking/MGAOIXOU8ZC.html> >

⁴⁰ “Officers Arrest S.F. Airport Workers,” *Washingtonpost.com*, AP, Mar. 26, 9:23 PM. < <http://www.washingtonpost.com/wp-dyn/articles/A22437-2002Mar26.html> >

⁴¹ “N Korea Seals Internet Gambling Venture,” *Agence-France Presse*, Pyongyang Mar. 29, 2002.

⁴² “Fast Lane to Future is Now Open,” *State of Michigan*, Mar. 14, 2002. < <http://www.michigan.gov/gov/1,1431,7-103-703-20210--M,00.html> >

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