

## Appendix A

Statement of Qualifications of Susan M. Baldwin

**SUSAN M. BALDWIN**  
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Susan M. Baldwin is presently an independent consultant to public sector agencies. Ms. Baldwin has been actively involved in public policy for twenty-eight years, twenty-two of which have been in telecommunications policy and regulation. Ms. Baldwin received her Master of Economics from Boston University, her Master of Public Policy from Harvard University's John F. Kennedy School of Government, and her Bachelor of Arts degree in Mathematics and English from Wellesley College.

Ms. Baldwin has extensive experience both in government and in the private sector. Since 2001, Ms. Baldwin has been advising and testifying on behalf of public sector agencies as an independent consultant. Recently, she has testified on behalf of the New Jersey Division of the Ratepayer Advocate in several major proceedings including Verizon's acquisition of MCI, SBC's acquisition of AT&T, and Sprint's spin-off of its local operations. Ms. Baldwin has also assisted the Ratepayer Advocate in preparing comments in diverse Federal Communications Commission proceedings.

Also in her capacity as an independent consultant, she provided comprehensive technical assistance to the Massachusetts Department of Telecommunications and Energy (DTE), serving as a direct advisor in a comprehensive investigation of recurring and nonrecurring costs for unbundled network elements (UNEs). She sponsored testimony in a numbering resource and virtual "NXX" proceeding on behalf of the Iowa Office of Consumer Advocate; on UNE cost studies on behalf of the Illinois Citizens Utility Board; on Qwest's petition to reclassify certain services as competitive on behalf of the Attorney General of the State of Washington; on Verizon's requests to raise basic local exchange rates and to reclassify small business local exchange service as competitive, on behalf of the New Jersey Division of the Ratepayer Advocate, and on CenturyTel's request to raise rates on behalf of the Arkansas Attorney General's Office.

Ms. Baldwin also worked on behalf of consumer advocates in the state *Triennial Review Order* ("TRO") proceedings. She prepared comprehensive testimony analyzing mass market impairment on behalf of the New Jersey Division of the Ratepayer Advocate, the Arkansas Office of the Attorney General, and the Utah Committee of Consumer Services. Testimony was not filed in Arkansas or Utah because of the DC Circuit Court ruling in *USTA v. FCC*, which caused these states to postpone their investigations of impairment. Ms. Baldwin also prepared detailed affidavits on behalf of the New Jersey Division of the Ratepayer Advocate and on behalf of the Utah Committee of Consumer Services, which were submitted in the Federal Communication Commission's rulemaking proceeding on network unbundling.

Ms. Baldwin has testified before the Arkansas Public Service Commission, California Public Utilities Commission, Colorado Public Utilities Commission, Connecticut Department of

Public Utility Control, Idaho Public Utilities Commission, Illinois Commerce Commission, Indiana Utility Regulatory Commission, Iowa Utilities Board, Massachusetts Department of Telecommunications and Energy, Nevada Public Service Commission, New Jersey Board of Regulatory Commissioners, Public Utilities Commission of Ohio, Rhode Island Public Utilities Commission, Tennessee Public Service Commission, Vermont Public Service Board, and Washington Utilities and Transportation Commission. Ms. Baldwin has also authored numerous comments submitted in various Federal Communications Commission proceedings.

She has also participated in projects in Delaware, the District of Columbia, Hawaii, Illinois, New York, Pennsylvania, and Canada on behalf of consumer advocates, public utility commissions, and competitive local exchange carriers. Ms. Baldwin has served in a direct advisory capacity to public utility commissions in the District of Columbia, Massachusetts, New Mexico, Utah and Vermont. Ms. Baldwin has also testified on behalf of public utility commission staff in Idaho and Rhode Island.

Ms. Baldwin worked with Economics and Technology, Inc. for twelve years, most recently as a Senior Vice President. Among her numerous projects were the responsibility of advising the Vermont Public Service Board in matters relating to a comprehensive investigation of NYNEX's revenue requirement and proposed alternative regulation plan. She participated in all phases of the docket, encompassing review of testimony, issuance of discovery, cross-examination of witnesses, drafting memoranda and decisions, and reviewing compliance filings. Another year-long project managed by Ms. Baldwin was the in-depth analysis and evaluation of the cost proxy models submitted in the FCC's universal service proceeding. Also, on behalf of the staff of the Idaho Public Utilities Commission, Ms. Baldwin testified on the proper allocation of US West's costs between regulated and non-regulated services. On behalf of AT&T Communications of California, Inc. and MCI Telecommunications Corporation, Ms. Baldwin comprehensively analyzed the non-recurring cost studies submitted by California's incumbent local exchange carriers.

Ms. Baldwin served as a direct advisor to the Massachusetts Department of Telecommunications and Energy (DTE) between August 2001 and July 2003, in Massachusetts DTE Docket 01-20, an investigation of Verizon's total element long run incremental cost (TELRIC) studies for recurring and nonrecurring unbundled network elements (UNEs). She assisted with all aspects of this comprehensive case in Massachusetts. Ms. Baldwin analyzed recurring and nonrecurring costs studies; ran cost models; reviewed parties' testimony, cross-examined witnesses, trained staff, met with the members of the Commission, assisted with substantial portions of the major orders issued by the DTE; and also assisted with the compliance phase of the proceeding.

Ms. Baldwin has participated in numerous investigations of the impact of proposed mergers of telecommunications carriers on consumers. Most recently, Ms. Baldwin sponsored testimony and a declaration on behalf of the New Jersey Division of the Ratepayer Advocate on Verizon's acquisition of MCI, and SBC's acquisition of AT&T. During the 1990s, Ms. Baldwin also sponsored testimony on behalf of the Nevada Bureau of Consumer Protection on the

proposed merger of Sprint and WorldCom; sponsored testimony on behalf of the Office of Ratepayer Advocates (ORA) of the California Public Utilities Commission and also on behalf of the Washington Office of Attorney General in their respective investigations of the proposed merger of Bell Atlantic Corporation and GTE Corporation; co-managed assistance to the Hawaii Division of Consumer Advocacy in the analysis of the proposed BA/GTE merger; sponsored testimony on behalf of the Ohio Consumers' Counsel and the Indiana Office of Utility Consumer Counselor on the SBC/Ameritech merger; co-sponsored testimony on behalf of the Connecticut Office of Consumer Counsel on the impact of SBC's acquisition of SNET on consumers; co-authored affidavits submitted to the FCC on behalf of consumer coalitions on the SBC/Ameritech and BA/GTE mergers; and co-managed a project to assist the ORA analyze the California Public Utilities Commission's investigation of the merger of Pacific Telesis Group and SBC Communications.

Ms. Baldwin has contributed to the development of state and federal policy on numbering matters. On behalf of the Ad Hoc Telecommunications Users Committee, Ms. Baldwin participated in the Numbering Resource Optimization Working Group (NRO-WG), and in that capacity, served as a co-chair of the Analysis Task Force of the NRO-WG. She has also provided technical assistance to consumer advocates in the District of Columbia, Illinois, Iowa, Massachusetts, and Pennsylvania on area code relief and numbering optimization measures. Ms. Baldwin also co-authored comments on behalf of the National Association of State Utility Consumer Advocates in the FCC's proceeding on numbering resource optimization.

During her first years at ETI, Ms. Baldwin was the Director of Publications and Tariff Research, and, in that capacity, she trained and supervised staff in the analysis of telecommunications rate structures, services, and regulation.

Ms. Baldwin served four years as the Director of the Telecommunications Division for the Massachusetts Department of Public Utilities (the predecessor to the DTE), where she directed a staff of nine, and acted in a direct advisory capacity to the DPU Commissioners. (The Massachusetts DTE maintains a non-separated staff, which directly interacts with the Commission, rather than taking an advocacy role of its own in proceedings). Ms. Baldwin advised and drafted decisions for the Commission in numerous DPU proceedings including investigations of a comprehensive restructuring of New England Telephone Company's rates, an audit of NET's transactions with its NYNEX affiliates, collocation, ISDN, Caller ID, 900-type services, AT&T's request for a change in regulatory treatment, pay telephone and alternative operator services, increased accessibility to the network by disabled persons, conduit rates charged by NET to cable companies, and quality of service. Under her supervision, staff analyzed all telecommunications matters relating to the regulation of the then \$1.7-billion telecommunications industry in Massachusetts, including the review of all telecommunications tariff filings; petitions; cost, revenue, and quality of service data; and certification applications. As a member of the Telecommunications Staff Committees of the New England Conference of Public Utility Commissioners (NECPUC) and the National Association of Regulatory Utility Commissioners (NARUC), she contributed to the development of telecommunications policy on state, regional, and national levels.

Ms. Baldwin has worked with local, state, and federal officials on energy, environmental, budget, welfare, and telecommunications issues. As a policy analyst for the New England Regional Commission (NERCOM), Massachusetts Department of Public Welfare (DPW), and Massachusetts Office of Energy Resources (MOER), she acquired extensive experience working with governors' offices, state legislatures, congressional offices, and industry and advocacy groups. As an energy analyst for NERCOM, Ms. Baldwin coordinated New England's first regional seminar on low-level radioactive waste, analyzed federal and state energy policies, and wrote several reports on regional energy issues. As a budget analyst for the DPW, she forecast expenditures, developed low-income policy, negotiated contracts, prepared and defended budget requests, and monitored expenditures of over \$100 million. While working with the MOER, Ms. Baldwin conducted a statewide survey of the solar industry and analyzed federal solar legislation.

Ms. Baldwin received Boston University's Dean's Fellowship. While attending the Kennedy School of Government, Ms. Baldwin served as a teaching assistant for a graduate course in microeconomics and as a research assistant for the school's Energy and Environmental Policy Center, and at Wellesley College was a Rhodes Scholar nominee. She has also studied in Ghent, Belgium.

### **Record of Prior Testimony**

In the matter of the Application of the New Jersey Bell Telephone Company for Approval of its Plan for an Alternative Form of Regulation, New Jersey Board of Regulatory Commissioners Docket No. T092030358, on behalf of the New Jersey Cable Television Association, filed September 21, 1992, cross-examined October 2, 1992.

DPUC review and management audit of construction programs of Connecticut's telecommunications local exchange carriers, Connecticut Department of Public Utility Control Docket No. 91-10-06, on behalf of the Connecticut Office of the Consumer Counsel, filed October 30, 1992, cross-examined November 4, 1992.

Joint petition of New England Telephone and Telegraph Company and Department of Public Service seeking a second extension of the Vermont Telecommunications Agreement, Vermont Public Service Board 5614, Public Contract Advocate, filed December 15, 1992, cross-examined December 21, 1992.

Application of the Southern New England Telephone Company to amend its rates and rate structure, Connecticut Department of Public Utility Control Docket No. 92-09-19, on behalf of the Connecticut Office of Consumer Counsel, filed March 26, 1993 and May 19, 1993, cross-examined May 25, 1993.

In the matter of the Application of Cincinnati Bell Telephone Company for Approval of an Alternative Form of Regulation and for a Threshold Increase in Rates, Public Utilities Commission of Ohio Case No. 93-432-TP-ALT, on behalf of Time Warner AxS, filed March 2, 1994.

Matters relating to IntraLATA Toll Competition and Access Rate Structure, Rhode Island Public Utilities Commission Docket 1995, on behalf of the Rhode Island Public Utilities Commission Staff, filed March

28, 1994 and June 9, 1994, cross-examined August 1, 1994.

In the Matter of the Application of The Ohio Bell Telephone Company for Approval of an Alternative Form of Regulation, Public Utilities Commission of Ohio Case No. 93-487-TP-ALT, on behalf of Time Warner AxS, filed May 5, 1994, cross-examined August 11, 1994.

In Re: Universal Service Proceeding: The Cost of Universal Service and Current Sources of Universal Service Support, Tennessee Public Service Commission Docket No. 95-02499, on behalf of Time Warner AxS of Tennessee, L.P., filed October 18, 1995 and October 25, 1995, cross-examined October 27, 1995.

In Re: Universal Service Proceeding: Alternative Universal Service Support Mechanisms, Tennessee Public Service Commission Docket No. 95-02499, on behalf of Time Warner AxS of Tennessee, L.P., filed October 30, 1995 and November 3, 1995, cross-examined November 7, 1995.

In the Matter of the Application of US West Communications, Inc. for Authority to Increase its Rates and Charge for Regulated Title 61 Services, Idaho Public Utilities Commission Case No. USW-S-96-5, on behalf of the Staff of the Idaho Public Utilities Commission, filed November 26, 1996 and February 25, 1997, cross-examined March 19, 1997.

A Petition by the Regulatory Operations Staff to Open an Investigation into the Procedures and Methodologies that Should Be Used to Develop Costs for Bundled or Unbundled Telephone Services or Service Elements in the State of Nevada, Nevada Public Service Commission Docket No. 96-9035, on behalf of AT&T Communications of Nevada, Inc., filed May 23, 1997, cross-examined June 6, 1997.

Rulemaking on the Commission's Own Motion to Govern Open Access to Bottleneck Services and Establish a Framework for Network Architecture; Investigation on the Commission's Own Motion into Open Access and Network Architecture Development of Dominant Carrier Networks, California Public Utilities Commission R.93-04-003 and I.93-04-002, co-authored a declaration on behalf of AT&T Communications of California, Inc., and MCI Telecommunications Corporation, filed on December 15, 1997 and on February 11, 1998.

Consolidated Petitions for Arbitration of Interconnection Agreements, Massachusetts Department of Telecommunications and Energy, DPU 96-73/74, 96-75, 96-80/81, 96-83, and 96-84, on behalf of AT&T Communications of New England, Inc. and MCI Telecommunications Corporation, filed February 3, 1998.

In the Matter of the Application of US West Communications, Inc. for Specific Forms of Price Regulation, Colorado Public Utilities Commission Docket No. 97-A-540T, on behalf of the Colorado Office of Consumer Counsel, filed on April 16, 1998, May 14, 1998 and May 27, 1998, cross-examined June 2, 1998.

Joint Application of SBC Communications and Southern New England Telecommunications Corporation for Approval of a Change of Control, Connecticut Department of Public Utility Control Docket No. 98-02-20, on behalf of the Connecticut Office of Consumer Counsel, filed May 7, 1998 and June 12, 1998, cross-examined June 15-16, 1998.

Fourth Annual Price Cap Filing of Bell Atlantic-Massachusetts, Massachusetts Department of Telecommunications and Energy Docket DTE 98-67, on behalf of MCI Telecommunications

Corporation, filed September 11, 1998 and September 25, 1998, cross-examined October 22, 1998.

Applications of Ameritech Corp., Transferor, and SBC Communications, Inc., Transferee, For Consent to Transfer Control, Federal Communications Commission CC Docket No. 98-141, co-sponsored affidavit on behalf of Indiana Utility Consumer Counselor, Michigan Attorney General, Missouri Public Counsel, Ohio Consumers' Counsel, Texas Public Utility Counsel and Utility Reform Network, filed on October 13, 1998.

In the Matter of the Joint Application of SBC Communications Inc., SBC Delaware, Inc., Ameritech Corporation and Ameritech Ohio for Consent and Approval of a Change of Control, Public Utilities Commission of Ohio Case No.98-1082-TP-AMT, on behalf of Ohio Consumers' Counsel, filed on December 10, 1998, cross-examined on January 22, 1999.

GTE Corporation, Transferor, and Bell Atlantic Corporation, Transferee, For Consent to Transfer Control, Federal Communications Commission CC Docket No. 98-184, co-sponsored an affidavit on behalf of a coalition of consumer advocates from Delaware, Hawaii, Maine, Maryland, Missouri, Ohio, Oregon, West Virginia, and Michigan, filed on December 18, 1998.

In the Matter of the Joint Application of GTE and Bell Atlantic to Transfer Control of GTE's California Utility Subsidiaries to Bell Atlantic, Which Will Occur Indirectly as a Result of GTE's Merger with Bell Atlantic, California Public Utilities Commission A. 98-12-005, on behalf of the California Office of Ratepayer Advocate, filed on June 7, 1999.

In the Matter of the Investigation on the Commission's Own Motion Into All Matters Relating to the Merger of Ameritech Corporation and SBC Communications Inc., Indiana Utility Regulatory Commission Cause No. 41255, on behalf of the Indiana Office of Utility Consumer Counselor, filed on June 22, 1999 and July 12, 1999, cross-examined July 20, 1999.

In re Application of Bell Atlantic Corporation and GTE Corporation for Approval of the GTE Corporation - Bell Atlantic Corporation Merger, Washington Utilities and Transportation Commission UT-981367, on behalf of the Washington Attorney General Public Counsel Section, filed on August 2, 1999.

Application of New York Telephone Company for Alternative Rate Regulation, Connecticut Department of Public Utility Control Docket No. 99-03-06, on behalf of the Connecticut Office of Consumer Counsel, filed October 22, 1999.

In re: Area Code 515 Relief Plan, Iowa Utilities Board Docket No. SPU-99-22, on behalf of the Iowa Office of Consumer Advocate, filed November 8, 1999, and December 3, 1999, cross-examined December 14, 1999.

In re Application of MCI WorldCom, Inc. and Central Telephone Company - Nevada, d/b/a Sprint of Nevada, and other Sprint entities for Approval of Transfer of Control pursuant to NRS 704.329, Nevada Public Utilities Commission Application No. 99-12029, on behalf of the Nevada Office of the Attorney General, Bureau of Consumer Protection, filed April 20, 2000.

In re: Area Code 319 Relief Plan, Iowa Utilities Board Docket No. SPU-99-30, on behalf of the Iowa Office of Consumer Advocate, filed June 26, 2000 and July 24, 2000.

In re: Sprint Communications Company, L.P. & Level 3 Communications, L.L.C., Iowa Utilities Board Docket Nos. SPU-02-11 & SPU-02-13, filed October 14, 2002 and January 6, 2003, cross-examined February 5, 2003.

Illinois Bell Telephone Company filing to increase unbundled loop and nonrecurring rates (tariffs filed December 24, 2002), Illinois Commerce Commission Docket No. 02-0864, on behalf of Citizens Utility Board, filed May 6, 2003 and February 20, 2004.

Qwest Petition for Competitive Classification of Business Services, Washington Utilities and Transportation Commission Docket No. 030614, on behalf of Public Counsel, filed August 13, 2003 and August 29, 2003, cross-examined September 18, 2003.

In the Matter of the Application of CenturyTel of Northwest Arkansas, LLC for Approval of a General Change in Rates and Tariffs, Arkansas Public Service Commission Docket No. 03-041-U, on behalf of the Attorney General, filed October 9, 2003 and November 20, 2003.

In the Matter of the Board's Review of Unbundled Network Elements, Rates, Terms and Conditions of Bell Atlantic New Jersey, Inc., New Jersey Board of Public Utilities Docket No. TO00060356, on behalf of the New Jersey Division of the Ratepayer Advocate, filed January 23, 2004.

In the Matter of the Implementation of the Federal Communications Commission's Triennial Review Order, New Jersey Board of Public Utilities Docket No. TO03090705, on behalf of the New Jersey Division of the Ratepayer Advocate, filed February 2, 2004.

Unbundled Access to Network Elements, Review of the Section 251 Unbundling Obligations of Local Exchange Carriers, Federal Communications Commission WC Docket No. 04-313, CC Docket No. 01-338, sponsored affidavit on behalf of the New Jersey Division of the Ratepayer Advocate, filed October 4, 2004.

Unbundled Access to Network Elements, Review of the Section 251 Unbundling Obligations of Local Exchange Carriers, Federal Communications Commission WC Docket No. 04-313, CC Docket No. 01-338, sponsored affidavit on behalf of the Utah Committee of Consumer Services, filed October 4, 2004.

In the Matter of Verizon New Jersey, Inc. For a Revision of Tariff B.P.U.-N.J. – No. 2 Providing for a Revenue Neutral Rate Restructure Including a Restructure of Residence and Business Basic Exchange Service and Elimination of \$.65 Credit, New Jersey Board of Public Utilities Docket No. TT04060442, on behalf of the New Jersey Division of the Ratepayer Advocate, filed December 22, 2004 and January 18, 2005.

In the Matter of the Application of Verizon New Jersey, Inc. for Approval (I) of a New Plan for an Alternative Form of Regulation and (II) to Reclassify Multi-Line Rate Regulated Business Services as Competitive Services, and Compliance Filing, New Jersey Board of Public Utilities Docket No. TO01020095, on behalf of the New Jersey Division of the Ratepayer Advocate, filed January 10, 2005 and February 4, 2005.

Joint Petition of SBC Communications Inc. and AT&T Corp., Together with its Certificated Subsidiaries for Approval of Merger, New Jersey Board of Public Utilities Docket No. TM05020168, on behalf of the

New Jersey Division of the Ratepayer Advocate, filed May 4, 2005 and June 1, 2005.

In the Matter of Verizon Communications Inc. and MCI, Inc., Applications for Approval of Transfer of Control, WC Docket No. 05-75, co-sponsored affidavit on behalf of the New Jersey Division of the Ratepayer Advocate, filed on May 9, 2005.

In the Matter of the Application of Southwestern Bell Telephone, L.P., d/b/a SBC Arkansas to Set Rates for Unbundled Network Elements, Arkansas Public Service Commission Docket No. 04-109-U, on behalf of the Attorney General, filed May 27, 2005.

Joint Petition of Verizon Communications Inc. and MCI, Inc. for Approval of Merger, New Jersey Board of Public Utilities Docket No. TM05030189, on behalf of the New Jersey Division of the Ratepayer Advocate, filed July 8, 2005 and August 19, 2005.

In the Matter of Joint Petition of United Telephone Company of New Jersey, Inc. d/b/a Sprint and LTD Holding Company for Approval Pursuant to *N.J.S.A. 48:2-51* and *N.J.S.A. 48:3-10* of a change in Ownership and Control, New Jersey Board of Public Utilities Docket No. TM05080739, on behalf of the New Jersey Division of the Ratepayer Advocate, filed November 29, 2005.

*Testimony before State Legislatures:*

Testified on September 24, 1997, before the Massachusetts State Legislature Joint Committee on Government Regulations regarding House Bill 4937 (concerning area codes).

**Publications/Presentations**

Articles on telecommunications and energy policy in trade journals, and presentations at industry associations and conferences include the following:

*Reports:*

“Assessing SBC/Pacific’s Progress in Eliminating Barriers to Entry: The Local Market in California Is Not Yet ‘Fully and Irreversibly Open’” (with Patricia D. Kravtin, Dr. Lee L. Selwyn, and Douglas S. Williams). Prepared for the California Association of Competitive Telecommunications Companies, July 2000.

“Where Have All the Numbers Gone? (Second Edition): Rescuing the North American Numbering Plan from Mismanagement and Premature Exhaust” (with Dr. Lee L. Selwyn). Prepared for the Ad Hoc Telecommunications Users Committee, June 2000.

“Price Cap Plan for USWC: Establishing Appropriate Price and Service Quality Incentives for Utah” (with Patricia D. Kravtin and Scott C. Lundquist). Prepared for the Utah Division of Public Utilities, March 22, 2000.

“Telephone Numbering: Establishing a Policy for the District of Columbia to Promote Economic Development” (with Douglas S. Williams and Sarah C. Bosley). Prepared for the District of Columbia Office of People’s Counsel, February 2000 (submitted to Eric W. Price, Deputy Mayor, April 6, 2000).

“The Use of Cost Proxy Models to Make Implicit Support Explicit, Assessing the BCPM and the Hatfield Model 3.1” (with Dr. Lee L. Selwyn). Prepared for the National Cable Television Association, submitted in FCC CC Docket No. 96-45, March 1997.

“The Use of Forward-Looking Economic Cost Proxy Models” (with Dr. Lee L. Selwyn). Prepared for the National Cable Television Association, submitted in FCC Docket No. CCB/CPB 97-2, February 1997.

“Continuing Evaluation of Cost Proxy Models for Sizing the Universal Service Fund, Analysis of the Similarities and Differences between the Hatfield Model and the BCM2” (with Dr. Lee L. Selwyn). Prepared for the National Cable Television Association, submitted in FCC CC Docket No. 96-45, October 1996.

“Converging on a Cost Proxy Model for Primary Line Basic Residential Service, A Blueprint for Designing a Competitively Neutral Universal Service Fund” (with Dr. Lee L. Selwyn). Prepared for the National Cable Television Association, submitted in FCC CC Docket No. 96-45, August 1996.

“The BCM Debate, A Further Discussion” (with Dr. Lee L. Selwyn and Helen E. Golding). Prepared for the National Cable Television Association, submitted in FCC CC Docket No. 96-45, May 1996.

“The Cost of Universal Service, A Critical Assessment of the Benchmark Cost Model” (with Dr. Lee L. Selwyn). Prepared for the National Cable Television Association, submitted in FCC CC Docket No. 96-45, April 1996.

“Funding Universal Service: Maximizing Penetration and Efficiency in a Competitive Local Service Environment” (with Dr. Lee L. Selwyn). Prepared for Time Warner Communications, Inc., October 1995.

“A Balanced Telecommunications Infrastructure Plan for New York State” (with Dr. Lee L. Selwyn). Prepared for the New York User Parties, December 4, 1992.

“A Roadmap to the Information Age: Defining a Rational Telecommunications Plan for Connecticut” (with Dr. Lee L. Selwyn, Susan M. Gately, JoAnn S. Hanson, David N. Townsend, and Scott C. Lundquist). Prepared for the Connecticut Office of Consumer Counsel, October 30, 1992.

“Analysis of Local Exchange Carrier April 1988 Bypass Data Submissions” (with William P. Montgomery and Dr. Lee L. Selwyn). Prepared for the National Association of State Utility Consumer Advocates, August 1988.

“Strategic Planning for Corporate Telecommunications in the Post-Divestiture Era: A Five Year View” (with Dr. Lee L. Selwyn, William P. Montgomery, and David N. Townsend). Report to the International Communications Association, December 1986.

“Competitive Pricing Analysis of Interstate Private Line Services.” Prepared for the National Telecommunications Network, June 1986.

“Analysis of Diamond State Telephone Private Line Pricing Movements: 1980-1990.” Prepared for Network Strategies, Inc., April 1985.

“Analysis of New York Telephone Private Line Pricing Movements: 1980-1990.” Prepared for Network Strategies, Inc., February 1985.

*Presentations:*

“FCC’s Regulatory Stance – Consumer Advocates’ Role More Important Than Ever,” 2005 National Association of State Utility Consumer Advocates Winter Meeting, March 2, 2005, Washington, D.C.

“Impact of Federal Regulatory Developments on Consumers and Consumers’ Impact on Regulatory Developments,” Presentation for the Washington Attorney General’s Office, Seattle, Washington, May 27, 2003.

“The Finances of Local Competition” Presentation at the New England Conference of Public Utilities Commissioners 54th Annual Symposium, Mystic, Connecticut, May 21, 2001.

“Facilities-Based Competition” Presentation at the New England Conference of Public Utilities Commissioners 52nd Annual Symposium, Bretton Woods, New Hampshire, May 24, 1999.

“Exploring Solutions for Number Exhaust on the State Level” and “A Forum for Clarification and Dialogue on Numbering Ideas,” ICM Conference on Number Resource Optimization, December 10-11, 1998.

“Telecommunications Mergers: Impact on Consumers,” AARP Legislative Council 1998 Roundtable Meeting, November 18, 1998

“Consumer Perspectives on Incumbent Local Exchange Carrier Mergers,” National Association of Regulatory Utility Commissioners 110th Annual Convention, November 11, 1998.

Federal Communications Commission En Banc Hearing on “Proposals to Revised the Methodology for Determining Universal Service Support,” CC Docket Nos. 96-45 and 97-160,” June 8, 1998, panelist.

“Universal Service: Real World Applications,” 1997 National Association of State Utility Consumer Advocates Mid-Year Meeting, June 9, 1997.

“Modeling operating and support expenses” and “Modeling capital expenses,” panelist for Federal-State Joint Board on Universal Service Staff Workshops on Proxy Cost Models, January 14-15, 1997, CC Docket 96-45.

“Evaluating the BCM2: An Assessment of Its Strengths and Weaknesses,” presentation to the AT&T Cost Team (with Michael J. DeWinter), December 4, 1996.

“Interpreting the Telecommunications Act of 1996 Mandate for the Deployment of Advanced Telecommunications Services in a Fiscally Responsible and Fully Informed Manner” (with Helen E. Golding), *Proceedings of the Tenth NARUC Biennial Regulatory Information Conference*, Volume 3, September 11-13, 1996.

“Making Adjustments to the BCM2.” Presentation to the Staff of the Federal-State Joint Board on Universal Service, September 16, 1996.

“Converging on a Model: An Examination of Updated Benchmark Cost Models and their Use in Support of Universal Service Funding.” Presentation to the National Association of Regulatory Utility Commissioners Summer Committee Meetings, July 22, 1996.

“The Phone Wars and How to Win Them” (with Helen E. Golding). *Planning*, July 1996 (Volume 62, Number 7).

“ETI's Corrections to and Sensitivity Analyses of the Benchmark Cost Model.” Presentation to the Staff of the Federal-State Joint Board on Universal Service,” May 30, 1996.

“Redefining Universal Service.” Presentation at the *Telecommunications Reports* conference on “Redefining Universal Service for a Future Competitive Environment,” January 18, 1996.

“Funding Universal Service: Maximizing Penetration and Efficiency in a Competitive Local Service Environment,” (with Lee L. Selwyn, under the direction of Donald Shephard), a Time Warner Communications Policy White Paper, September 1995.

“Stranded Investment and the New Regulatory Bargain,” (with Lee L. Selwyn, under the direction of Donald Shephard), a Time Warner Communications Policy White Paper, September 1995.

“New Frontiers in Regulation.” Presentation to the New England Women Economists Association, December 12, 1995.

“Local Cable and Telco Markets.” Presentation at the New England Conference of Public Utilities Commissioners 46th Annual Symposium, June 29, 1993.

“Relationship of Depreciation to State Infrastructure Modernization.” Presentation at the *Telecommunications Reports* conference on “Telecommunications Depreciation,” May 6, 1993.

“Crafting a Rational Path to the Information Age.” Presentation at the State of New Hampshire's conference on the “Twenty-First Century Telecommunications Infrastructure,” April 1993.

“The Political Economics of ISDN,” presentation at the John F. Kennedy School of Government seminar on “Getting from Here to There: Building an Information Infrastructure in Massachusetts,” March 1993.

“ISDN Rate-Setting in Massachusetts.” *Business Communications Review*, June 1992 (Volume 22, No. 6).

“The New Competitive Landscape: Collocation in Massachusetts.” Presentation at TeleStrategies Conference on Local Exchange Competition, November 1991.

“Telecommunications Policy Developments in Massachusetts.” Presentations to the Boston Area Telecommunications Association, October 1989; March 1990; November 1990; June 1992. Presentation to the New England Telecommunications Association, March 1990.

“Tariff Data is Critical to Network Management.” *Telecommunications Products and Technology*, May 1988 (Volume 6, No. 5).

“How to Capitalize on the New Tariffs.” Presentation at Communications Managers Association conference, 1988.

“Auction Methods for the Strategic Petroleum Reserve” (With Steven Kelman and Richard Innes). Prepared for Harvard University Energy Security Program, July 1983.

“How Two New England Cities Got a \$100 Million Waste-to-Energy Project” (with Diane Schwartz). *Planning*, March 1983 (Volume 49, Number 3).

“Evaluation of Economic Development and Energy Program in Lawrence, Massachusetts.” (with Richard Innes). Prepared for U.S. Department of Energy, August, 1982.

“Energy Efficiency in New England's Rental Housing.” New England Regional Commission, 1981.

“Low Level Radioactive Waste Management in New England.” New England Regional Commission, 1981.

“The Realtor's Guide to Residential Energy Efficiency.” Prepared for the U.S. Department of Energy and the National Association of Realtors, 1980.

*Advisor to:*

United States General Accounting Office Report to the Subcommittee on Antitrust, Business Rights and Competition, Committee on the Judiciary, U.S. Senate, *Characteristics and Competitiveness of the Internet Backbone Market*, GAO-02-16, October 2001.

## Appendix B

Statement of Qualifications of Sarah M. Bosley

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Sarah M. Bosley is presently providing consulting services to public sector agencies as an independent consultant. Ms. Bosley has six years of experience in telecommunications economics, regulation, and public policy. Ms. Bosley earned her Master of Science in Agricultural and Applied Economics from Virginia Tech, her Master of Arts in International Affairs from American University, and her Bachelor of Arts in Political Science from McGill University.

Ms. Bosley worked with Economics and Technology, Inc. (“ETI”) for over four years, most recently as a Consultant. In her capacity as an independent consultant and, previously, as Consultant and Senior Analyst at ETI, Ms. Bosley conducts economic analysis and research and contributes to expert testimony and comments in numerous state and federal regulatory proceedings. She has contributed to and co-authored reports to state commissions, white papers, and comments filed in Federal Communications Commission (“FCC”) proceedings. Ms. Bosley’s experience includes the analysis of a broad range of public policy issues, including: numbering optimization and area code relief; intercarrier compensation; access charges; federal universal service policy; the impact of mergers on consumers; service quality; applications for section 271 authority; local competition; unbundled network elements and interconnection agreements; alternative regulation, price cap plans, and total factor productivity; and broadband deployment.

Ms. Bosley has substantial experience in the evaluation of state and federal regulation of incumbent local exchange carriers. She analyzed proposals in the FCC’s Price Cap Performance Review and Access Charge Proceedings. With regard to state proceedings, Ms. Bosley has participated in the preparation of expert testimony evaluating the incumbent local telephone company’s (“ILEC”) proposed plan for alternative rate regulation or reclassification of services as competitive in Connecticut, New Jersey, Illinois, Pennsylvania, Massachusetts, and Utah. She has modeled the effects of varying “X-factors” on a carrier’s earnings and utilized numerous methods for determining productivity growth factors to be used in an ILEC’s price cap plan. She has also contributed to testimony addressing local exchange market structure and the impact of alternative regulation plans on consumers. Ms. Bosley co-authored a study for the Wisconsin Public Service Commission regarding productivity for local exchange carriers in Wisconsin. Most recently, Ms. Bosley provided assistance to a state consumer advocate regarding the incumbent local exchange carrier’s requests to raise basic local exchange rates and to reclassify small business local exchange service as competitive.

Ms. Bosley has participated in numerous regulatory proceedings addressing the implementation of the Telecommunications Act of 1996. She was a member of project teams that analyzed the incumbent’s application for section 271 authority to provide long distance services in Pennsylvania and Minnesota. In Minnesota, her work concentrated on Qwest’s

operations support systems capabilities and a statistical analysis of wholesale service quality performance testing results. Ms. Bosley was actively involved in several state proceedings addressing local exchange competition policies and interconnection arrangements between incumbent local exchange providers and new market entrants, including a proceeding in New Jersey to set unbundled network element policy and rates and work on behalf of a new entrant in arbitration proceedings in Nevada, California, Georgia, Ohio, Pennsylvania, and New York.

Ms. Bosley's work has also included the evaluation of telecommunications mergers. On behalf of state consumer advocates in California, Hawaii, and Washington, she examined the effect of the proposed merger between Bell Atlantic Corporation and GTE Corporation on competition in the local telecommunications market, including the quantification of projected merger synergies to be shared with ratepayers. On behalf of the consumer advocate in Indiana, Ms. Bosley analyzed the impact of the merger between SBC Communications and Ameritech Corporation on local exchange competition, infrastructure investment, and service quality. Ms. Bosley assisted the New Jersey Division of the Ratepayer Advocate in its review of both the proposed merger of SBC Communications, Inc. and AT&T Corp. and the proposed merger of Verizon Communications and MCI, Inc. Ms. Bosley co-authored a declaration on behalf of the New Jersey Division of the Ratepayer Advocate in the FCC's review of the proposed merger between Verizon Communications and MCI, Inc. Most recently, Ms. Bosley contributed to an analysis of a proposed change in ownership and control of United Telephone Company of New Jersey and the consequences of declining capital expenditures and service quality.

Ms. Bosley has been actively involved in several FCC proceedings examining its Universal Service programs and policies. Her work includes co-authoring comments on behalf of a user's group regarding proposals to expand the definition of universal service to include, among other things, the provision of advanced services. More recently, she assisted a state consumer advocate in its preparation of comments regarding proposals to reform the management and administration of the Universal Service Fund and the rural High Cost program and an analysis of the implications of the *Qwest II* court decision for the non-rural High Cost program.

Ms. Bosley has developed extensive knowledge of numbering optimization measures both at the federal and state levels. She has contributed to and co-authored comments filed on behalf of consumer advocates and users groups in the Federal Communications Commission's numbering optimization docket. She contributed to initial and reply statements of position on behalf of the Iowa Office of the Consumer Advocate regarding area code relief and numbering conservation measures in Iowa, and provided technical assistance to the District of Columbia Office of People's Counsel regarding number conservation measures.

Ms. Bosley's consulting experience also includes participation in the FCC's evaluation of its inter-carrier compensation and special access regimes and analysis of access charge reform proposals at both the state and federal levels. Over the past year, this work has focused on the impact of new technologies on the regulation of the telecommunications industry. For example, she took an active role in the preparation of comments analyzing the access charge treatment of

IP-enabled calls; access to emergency services for Internet-based forms of Telecommunications Relay Service; and the development of a consumer protection framework for customers of broadband internet access services.

Ms. Bosley received the Driscoll Award for Outstanding Research for her master's thesis, which compared welfare reform outcomes in non-metropolitan communities to those in metropolitan communities. This work included the development and econometric estimation of a labor supply model used to identify barriers to participation in the labor market for female household heads. Ms. Bosley was also employed as Graduate Research Assistant for the Department of Agricultural and Applied Economics at Virginia Tech while pursuing her studies.

### **Publications/Papers/Declarations**

In the Matter of Verizon Communications, Inc. and MCI, Inc. Applications for Approval of Transfer of Control, Federal Communications Commission WC Docket No. 05-75, co-sponsored declaration with Susan M. Baldwin on behalf of the New Jersey Division of the Ratepayer Advocate, filed May 9, 2005.

“A Study of Total Factor Productivity in the Wisconsin Local Exchange Carrier Industry” (with Scott C. Lundquist and Lee L. Selwyn). Prepared for the Public Service Commission of Wisconsin (Docket No. 1-AC-193), January 2003.

“Telephone Numbering: Establishing a Policy for the District of Columbia to Promote Economic Development” (with Susan M. Baldwin and Douglas S. Williams). Prepared for the District of Columbia Office of People's Counsel, February 2000 (submitted to Eric W. Price, Deputy Mayor, April 6, 2000).

“How Welfare Reform Impacts Non-Metropolitan and Metropolitan Counties in Virginia,” (with Bradford Mills), *REAP Research Report Number 46*, Rural Economic Analysis Program of Virginia, September 1999.

“More to Welfare Reform than a Big Caseload Decline,” (with Trawana Porter, Jeff Alwang, and Bradford Mills), *Horizons*, Rural Economic Analysis Program of Virginia, September/October 1999.

## Appendix C

### Summary of Broadband Deployment and Demand

## Appendix C

### Summary of Broadband Deployment and Demand

#### Background

In a decision last year, remanding a universal service program to the Federal Communications Commission (“FCC” or “Commission”), the Court stated:

“Universal service” is defined in the Act as “an evolving level of telecommunications services,” taking into account those services that are essential to basic needs, *subscribed to by a majority of consumers*, deployed in networks, and consistent with defined policy goals. 47 U.S.C. § 254(c)(1). Implicit in this definition and the Act is access to these telecommunications services by consumers throughout the nation.<sup>1</sup>

Whether broadband service is “essential to basic needs” is one critical question.. Another important question is whether a majority of consumers subscribe to broadband. As broadband demand increases, and broadband becomes increasingly integrated into everyday home, work, and educational life, it becomes “essential to basic needs.” Data are essential to monitor the role of broadband in today’s society. Just as the Commission monitors subscription to basic telephone service, so too should it monitor broadband demand. Similarly, in order to ascertain whether “access to advanced telecommunications and information services [is] provided in all regions of the Nation,” to achieve the goal set forth in section 254(b) of the Act, the Commission should monitor broadband deployment comprehensively.

This appendix summarizes data on broadband demand as reported by various agencies and organizations.

#### Federal Communication Commission and U.S. Census Bureau

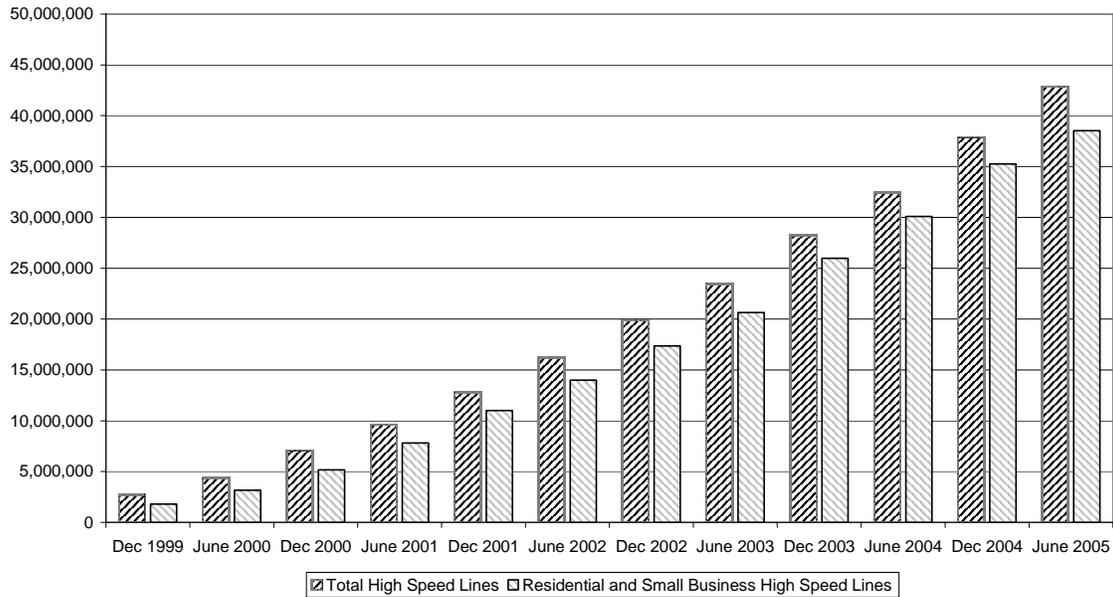
The Commission publishes the report, *High-Speed Services for Internet Access*, twice a year. The most recent report includes data as of June 30, 2005 for two levels of broadband service, “high speed” – over 200 kbps in at least one direction, and “advanced services” – over 200 kbps in both directions.

As of June 30, 2005, FCC estimates total high speed subscribership of 42,866,469, of which 38,515,303 are residential and small business customers. The table below shows the growth in the subscriber base for high speed access lines.

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<sup>1</sup>/ Qwest Corp. v. FCC, 398 F.3d 1222 (10th Cir. 2005) (“Qwest II”), at 1237, emphasis added.

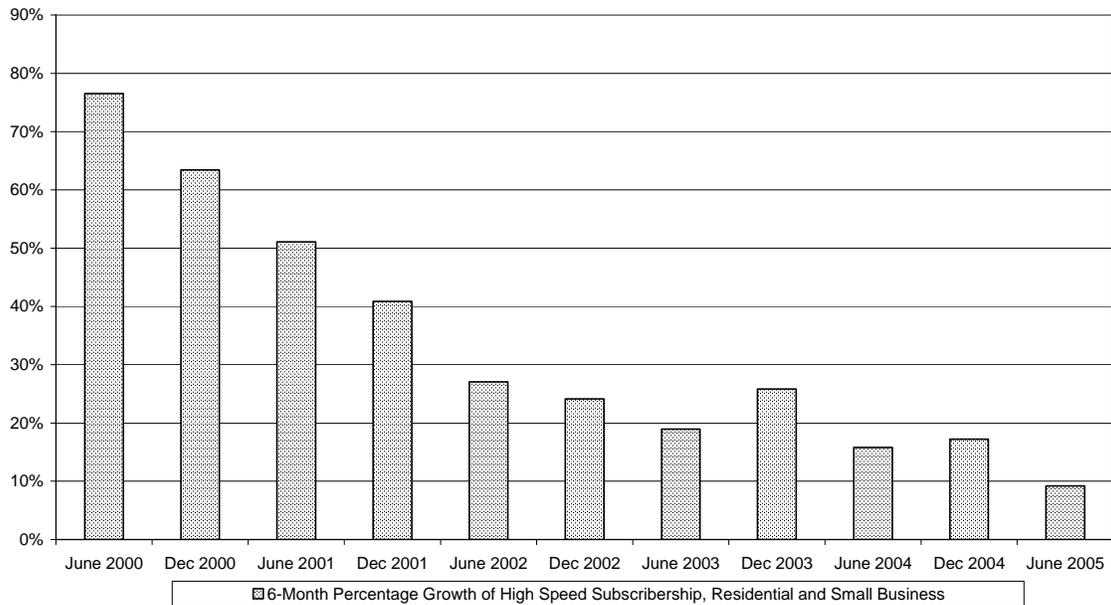
**High Speed Access Lines**  
 (Over 200 kbps in at least one direction)



Source: Federal Communication Commission, Industry Analysis and Technology Division, Wireline Competition Bureau, *High-Speed Services for Internet Access*, July 2005 Release, Tables 1 and 3; April 2006 Release, Tables 1 and 3.

Analysis of the demand for high speed access lines shows that although subscribership is increasing, the growth in demand, as measured by percentage growth, is slowing. The table below shows the six-month percentage growth in high speed access lines for residential and small business customers.

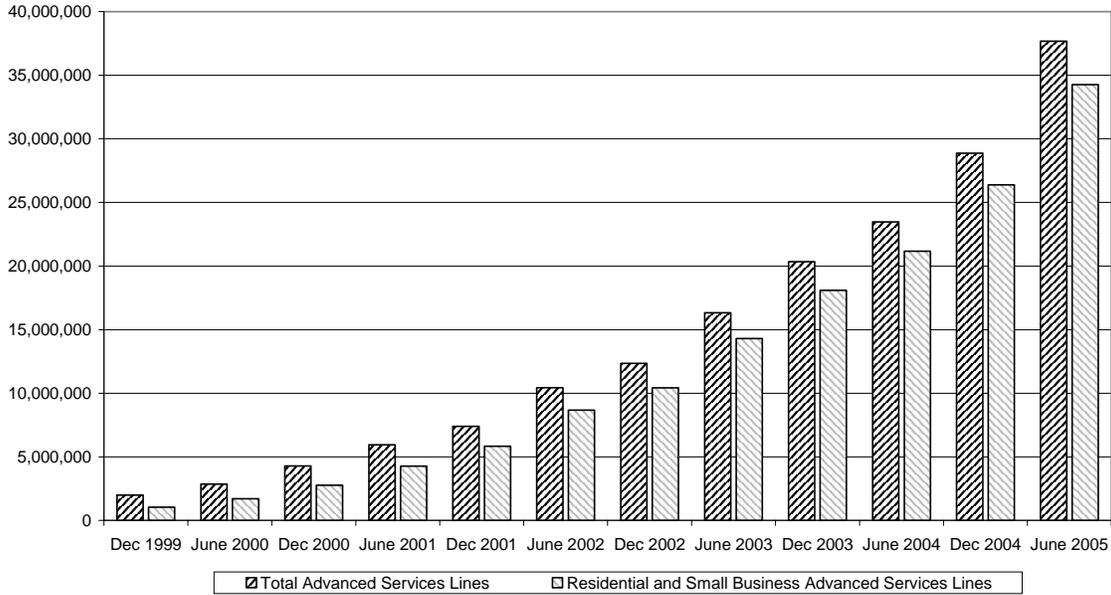
**6-Month Percentage Growth of High Speed Subscribers,  
Residential and Small Business Customers**



Source: Federal Communication Commission, Industry Analysis and Technology Division, Wireline Competition Bureau, *High-Speed Services for Internet Access: Status as of June 30, 2005* Released April 2006, Table 3.

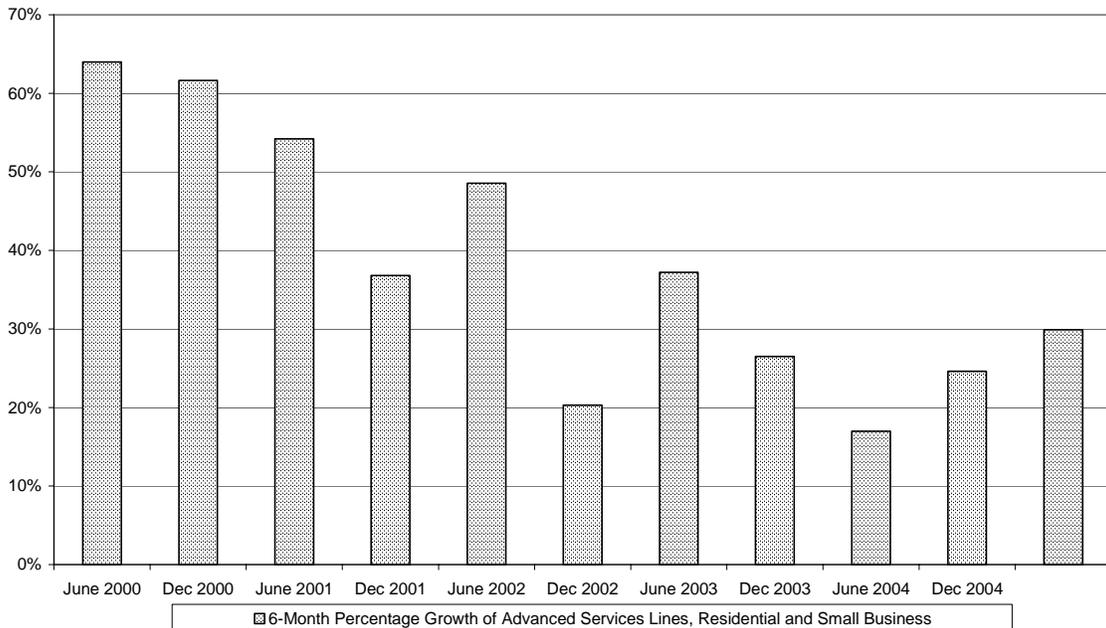
FCC estimates total advanced services lines at 37,669,844, of which 34,259,411 are residential and small business customers. The tables below show the number of subscribers over time, and the changing rate of growth of demand (as measured by percentage growth) by residential and small business customers.

**Advanced Services Lines**  
 (Over 200 kbps in both directions)



Source: Federal Communication Commission, Industry Analysis and Technology Division, Wireline Competition Bureau, *High-Speed Services for Internet Access*, July 2005 Release, Tables 2 and 4; April 2006 Release, Tables 2 and 4.

**6-Month Percentage Growth of Advanced Services Lines,  
 Residential and Small Business**



Source: Federal Communication Commission, Industry Analysis and Technology Division, Wireline Competition Bureau, *High-Speed Services for Internet Access: Status as of June 30, 2005*, Released April 2006, Table 4.

To estimate penetration rates, the subscribership numbers given above can be divided by the U.S. population, which was 296,410,404 according to the July 1, 2005 Population

Estimate.<sup>2</sup> In addition, according to the U.S. Census Bureau, the average household size was 2.57 persons in 2005,<sup>3</sup> which can be used to estimate the number of households, *i.e.*, 115,334,786. The table below shows that these calculations yield penetration rates of 12-14% per person, or 30-37% per household, depending on the metric used.

<b>Broadband Penetration Rates in the U.S.</b>			
<b>Penetration Rate (per person)</b>			
	Residential And Small Business		
	Lines	Total Lines	
High Speed Access Lines	13%	14%	
Advanced Services Lines	12%	13%	
<b>Penetration Rate (per household)</b>			
	Residential And Small Business		
	Lines	Total Lines	
High Speed Access Lines	33%	37%	
Advanced Services Lines	30%	33%	
Sources: Federal Communication Commission, Wireline Competition Bureau, Industry Analysis and Technology Division, <i>High-Speed Services for Internet Access: Status as of June 30, 2005</i> , Released April 2006; U.S. Census Bureau <i>American Factfinder</i> .			
Note: The U.S. population estimate for July 1, 2005 is 296,410,404. Using the metric of 2.57 persons per household, the estimate for the number of households is 115,334,786.			

### **Verizon, Qwest, BellSouth, and AT&T Reports**

Regional Bell holding company annual and quarterly reports provide digital subscriber line (DSL) subscribership data. From 2000 to 2005, Verizon, Qwest, BellSouth, and AT&T increased their combined DSL customer base by over 800%, from 1.8 million

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<sup>2</sup> / [http://factfinder.census.gov/servlet/DTable?\\_bm=y&-geo\\_id=01000US&-ds\\_name=PEP\\_2005\\_EST&-mt\\_name=PEP\\_2005\\_EST\\_G2005\\_T001](http://factfinder.census.gov/servlet/DTable?_bm=y&-geo_id=01000US&-ds_name=PEP_2005_EST&-mt_name=PEP_2005_EST_G2005_T001)

<sup>3</sup> / [http://www.census.gov/Press-Release/www/releases/archives/families\\_households/006840.html](http://www.census.gov/Press-Release/www/releases/archives/families_households/006840.html)

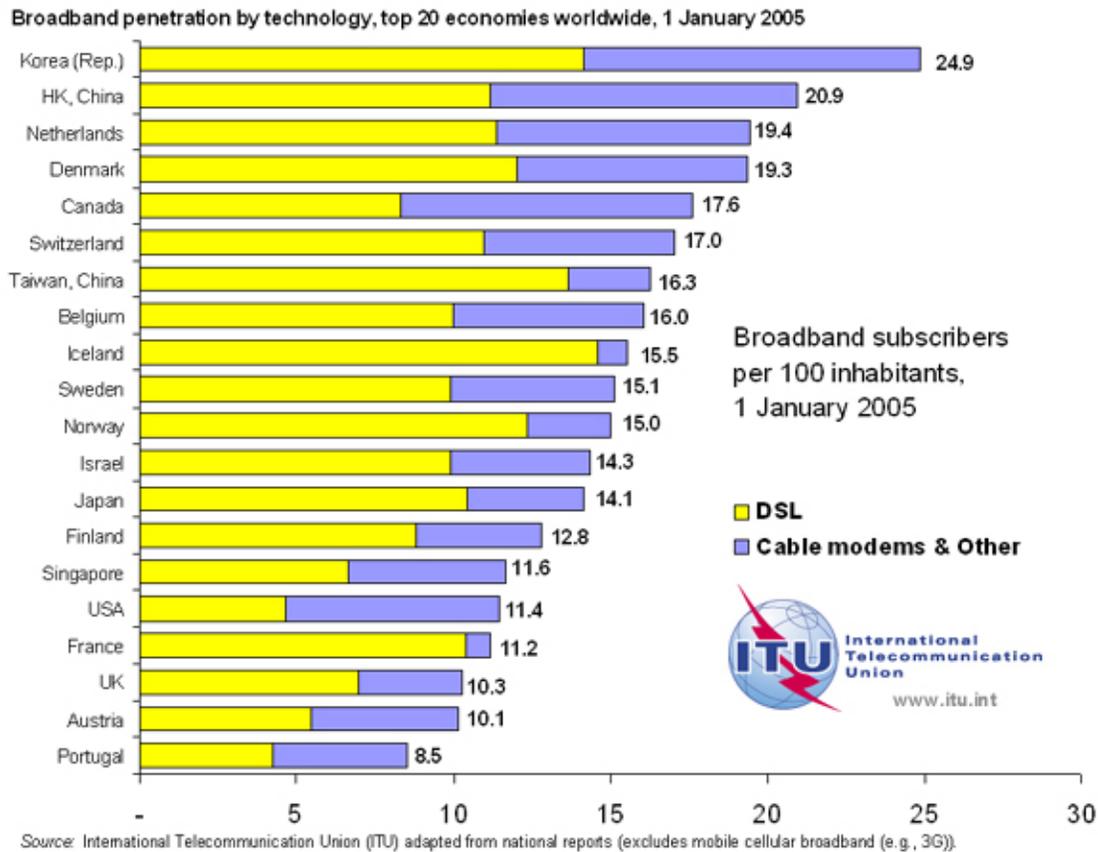
customers at the end of 2000 to 16.4 million customers at the end of 2005. The table below summarizes the latest data by company.

<b>DSL Customers, as of December 31, 2005</b> (in thousands)	
AT&T	6,900
Verizon	5,144
BellSouth	2,882
Qwest	1,480

Sources: BellSouth, Qwest, SBC (now AT&T), and Verizon quarterly and annual reports from 2000 through 2005.

### **International Telecommunication Union (ITU)**

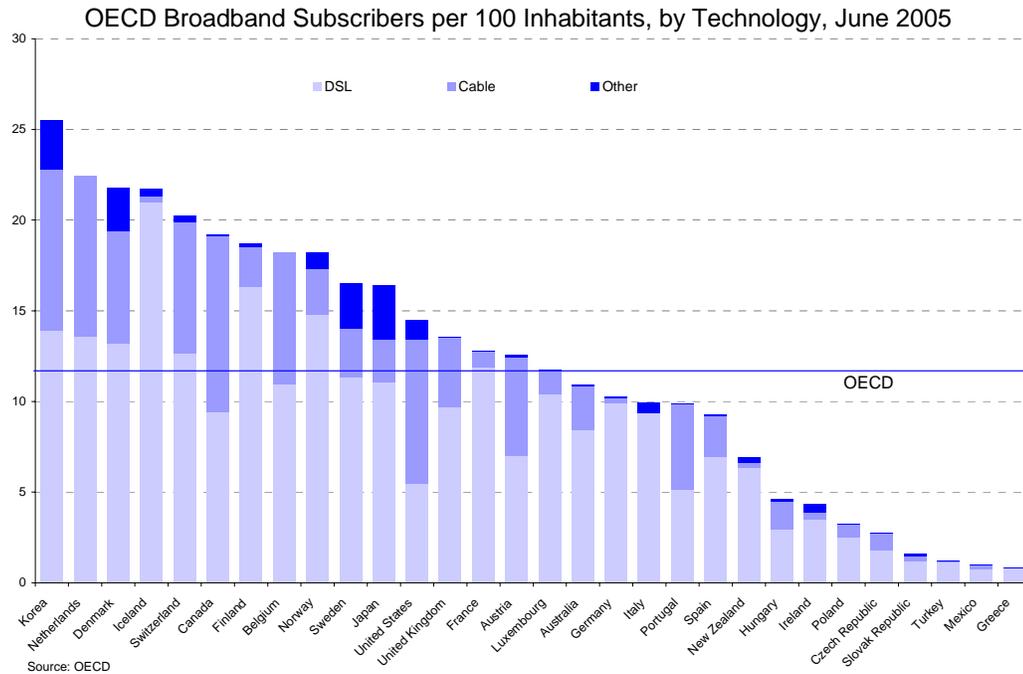
The ITU tabulates broadband statistics on a global scale. In April 2005, ITU published its statistics as of January 1, 2005. The 2005 rankings show USA dropping from 13<sup>th</sup> in 2004 to 16<sup>th</sup> in 2005. ITU estimates that USA has 11.4 broadband subscribers per 100 inhabitants. Korea has the top penetration rate, at 24.9 subscribers per 100 inhabitants.



### Organisation for Economic Co-operation and Development

The Organisation for Economic Co-operation and Development (OECD) publishes statistics for broadband penetration in OECD countries. Current data are from June 2005. OECD found that OECD broadband subscribership grew by 15% in the first half of 2005. The overall penetration rate for OECD countries was 11.8 subscribers per 100 inhabitants. The OECD ranks USA 12<sup>th</sup> among OECD countries, with 14.5 subscribers per 100 inhabitants. OECD estimates that there were 42,645,815 broadband subscribers in the USA as of June 2005.

According to OECD, DSL is the leading broadband platform in 28 of the 30 OECD countries. Cable broadband is the leading broadband platform in Canada and USA.



Source: [www.oecd.org](http://www.oecd.org).

### American Consumer Institute

On March 14, 2006, the American Consumer Institute (ACI) published its report, *Who Uses Information Technology Services? A Demographic Analysis of American Consumers*. The study represents the results of ACI's January 2006 *Consumer Pulse* survey of 1,000 heads of household. The goal of the survey is to determine how usage of different technologies varies based on demographics. The technology products covered are premium TV channel, pay per view TV channels, cellular telephones, text messaging, internet access, high-speed vs. dial-up internet access, email, instant messaging, and VoIP. ACI concludes that demographic factors show a narrowing of the "digital divide."

Among the findings relating to broadband are:

- 68% of the households surveyed have Internet access.
- Of the households with Internet access, 61% report having high-speed Internet access.
- Of those households with Internet access, high-speed access increases with increasing income, from 54% for households with income under \$25,000, to 77% for households with income greater than \$75,000.
- Of those with Internet access, the group "Hispanics, Asian, and Other" are more likely (67%) to have high-speed Internet access than either Caucasians (61%) or African-Americans (60%).

- High-speed Internet access generally (except for the 30 to 39 year old age range) declines with the age of the head of household, from 72% for the 29 and under group, to 42% for the over 65 group.
- About 67% of Urban and Suburban households with Internet access subscribe to high-speed Internet services in comparison with only 47% of Rural households who subscribe to high-speed Internet services.

### **Pew Internet & American Life Project**

The Pew Internet Project paper, *Broadband Adoption At Home In The United States: Growing But Slowing*, published in September 2005, states that the rate of broadband adoption is slowing in the U.S. The Project's May 2005 survey results indicate that 53% of home Internet users subscriber to broadband services, compared to 50% in December 2004. The Project's Director of Research, John B. Horrigan, calls this a "small and not statistically significant increase." The report finds that the pent-up demand for broadband services has diminished and that the pools of potential broadband customers are not large.

Other statistics in the report include:

- As of May 2005, 32% of the adult population does not use the Internet.
- According to the Project, 66 million Americans had high-speed Internet access at home in May 2005. This number is equal to about 33% of all adult Americans.

The Pew Internet & American Life project issued an earlier report in 2004, entitled "Older Americans and the Internet," Pew Internet & American Life. According to this report, 22% of Americans age 65 or older reported having access to the Internet. The report also states that by contrast, 58% of Americans age 50-64, 75% of 30-49 year-olds, and 77% of 18-29 year-olds go online as of February 2004."<sup>4</sup>

### **US Department of Commerce's National Telecommunications and Information Administration (NTIA)**

NTIA included the following data in a 2004 report, based on the Current Population Survey conducted in October 2003.<sup>5</sup> Certainly, broadband usage has become more

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<sup>4</sup> / "Older Americans and the Internet," Pew Internet & American Life, Principal author: Susannah Fox, March 25, 2004, at 1. The report also indicates that in February 2004, "17% of wired seniors live in high-income households, compared to 4% of all seniors. It is important to note, however, that fully 39% of seniors refused to answer the income question in February 2004." *Id.*, at 2. Also, "[s]eventy-two percent of wired seniors who go online at home have a dial-up connection, compared to 54% of the general Internet population who go online from home." *Id.*, at 3.

<sup>5</sup> / "A Nation Online: Entering the Broadband Age," US Department of Commerce, Economics and Statistics Administration, National Telecommunications and Information Administration, September 2004, Appendix Table 1. <http://www.ntia.doc.gov/reports/anol/NationOnlineBroadband04.doc>. See, also, "Are We Really a Nation Online? Ethnic and Racial Disparities in Access to Technology and Their Consequences," Report for the Leadership Conference on Civil Rights Education Fund, Robert W.

widespread in the more than two years that have passed since the survey was conducted. However, the following tables are illustrative of the types of data that the Commission should collect and analyze.

<b>Percentage of U.S. Individuals Age Three and Older Living in a Broadband Household, by Family Income (as of October 2003)</b>	
<i>Family Income</i>	<i>Percentage Living in Broadband Household</i>
Less than \$15,000	7.5%
\$15,000 - \$24,000	9.3%
\$25,000 - \$34,999	13.4%
\$35,000 - \$49,999	19.0%
\$50,000 - \$74,999	27.9%
\$75,000 and above	45.4%
\$75,000 - \$99,999	36.8%
\$100,000 - \$149,999	49.3%
\$150,000 and above	57.7%
Source: US Dept. of Commerce, Economics and Statistics Administration, National Telecommunications and Information Administration, <i>A Nation Online: Entering the Broadband Age</i> , September 2004, Appendix Table 1.	

The NTIA also analyzes the percentage of “non-Internet-using” households by income:

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Fairlie, September 20, 2005. The author concluded that the “Digital Divide is large and does not appear to be disappearing soon.” The study found that Blacks and Latinos were less likely to have access to the Internet in the home (40.5% and 38.1, respectively compared to an access rate of 67.3% for Whites). *Id.*, at i. Differences in income and education levels were the two largest explanatory variables for this disparity. *Id.*, at ii.

<b>Percentage of U.S. Individuals Reported as Non-Internet Users, by Family Income (as of October 2003)</b>	
<i>Family Income</i>	<i>Percentage of Non-Internet Users</i>
Less than \$15,000	68.8%
\$15,000 - \$24,000	62.0%
\$25,000 - \$34,999	51.1%
\$35,000 - \$49,999	37.9%
\$50,000 - \$74,999	28.2%
\$75,000 and above	17.1%
\$75,000 - \$99,999	20.2%
\$100,000 - \$149,999	14.9%
\$150,000 and above	13.9%
Source: US Dept. of Commerce, Economics and Statistics Administration, National Telecommunications and Information Administration, <i>A Nation Online: Entering the Broadband Age</i> , September 2004, Appendix Table 2.	

Finally, the NTIA report includes an analysis of the mode of access to the Internet by household. As the following data from the NTIA report clearly demonstrates, among Internet households, the use of dial-up access is relatively more prevalent among relatively lower income households and the use of broadband (or “high speed”) access increases as household income increases.

<b>Internet Connection Types for U.S. Households (as of October 2003)<sup>6</sup></b>							
<i>Family Income</i>	<i>Total Internet Households (000s)</i>	<i>Dial-Up Telephone</i>		<i>Cable Modem</i>		<i>Digital Subscriber Line (DSL)</i>	
		<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>
	61,481	38,593	62.8%	12,638	20.6%	9,335	15.2%
Less than \$15,000	3,681	2,555	69.4%	584	15.9%	477	13.0%
\$15,000 - \$24,000	3,839	2,786	72.6%	600	15.6%	418	10.9%
\$25,000 - \$34,999	5,855	4,137	70.7%	921	15.7%	694	11.9%
\$35,000 - \$49,999	8,867	6,213	70.1%	1,391	15.5%	1,138	12.8%
\$50,000 - \$74,999	12,429	7,918	63.7%	2,531	20.4%	1,814	14.6%
\$75,000 - \$99,999	7,774	4,440	57.1%	1,919	24.7%	1,321	17.0%
\$100,000 - \$149,999	5,811	2,726	46.9%	1,771	30.5%	1,207	20.8%
\$150,000 and above	3,753	1,482	39.5%	1,242	33.1%	961	25.6%

Source: US Dept. of Commerce, Economics and Statistics Administration, National Telecommunications and Information Administration, *A Nation Online: Entering the Broadband Age*, September 2004, Appendix Table 4.

According to the Bureau of Census' American Community Survey, 55% percent of U.S. households have incomes below \$50,000.<sup>7</sup> The survey reported by the NTIA demonstrates clearly that as income declines, the probability of Internet access declines, and, in those instances where households do have Internet access, as income declines, the probability of broadband rather than dial-up access also declines.

<sup>6</sup> / The NTIA report also includes data for the following categories: mobile/phone/PDA/pager, satellite, fixed wireless and other. For each of these categories, the percentages shown are less than one percent.

<sup>7</sup> / U.S. Bureau of Census, 2004 American Community Survey, Selected Economic Statistics: 2004. U.S. median household income (that is, the income level above which half the households have more income and half the households have less income) in 2004 was reported as \$44,684. The median household income in New Jersey is \$61,389 for 2004 (in 2004 dollars). Just over 41 percent of New Jersey households have incomes below \$50,000. U.S. Bureau of Census, 2004 American Community Survey, Selected Economic Characteristics: 2004.

### **Broadband Everywhere's *A Picture Is Worth a Thousand Words***

In April 2006, Broadband Everywhere, a bipartisan organization devoted to promoting broad deployment of competitive broadband networks, released its report, *A Picture Is Worth a Thousand Words*, which presents data gathered from the Bells regarding rollout of fiber to the home. By examining company announcements about which neighborhoods are slated for fiber, and matching those communities to Census data, Broadband Everywhere concludes that the Bells are intentionally underserving low-income customers and minorities, instead deploying "fiber-to-the-rich." The report looks at data from ten states, which together represent planned fiber installation to 507 target neighborhoods. Of those neighborhoods, 438 have median income above the median income of the state in which they are located. Only 18 have African Americans or Latinos as majority populations.

### **Broadband Deployment in New Jersey**

The analysis reported in *A Picture Is Worth a Thousand Words* is consistent with the pattern of broadband deployment in New Jersey. The following table was included with the initial comments of the New Jersey Division of the Ratepayer Advocate, In the Matter of Consumer Protection in the Broadband Era, WC Docket No. 05-271, January 17, 2006.

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**Verizon's FTTP Roll-Out Favors Affluent Communities**


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<b>Community</b>	<b>Population</b>	<b>Median Household Income</b>	<b>Percent of New Jersey Statewide Median Household Income</b>
New	8,698,879	\$55,146	100%
Rockleigh	396	\$152,262	276%
Mendham	5,625	\$136,174	247%
Franklin	11,260	\$132,373	240%
Alpine	2,340	\$130,740	237%
Ho-Ho-Kus	4,095	\$129,900	236%
Woodcliff	5,886	\$123,022	223%
Allendale	6,799	\$105,704	192%
Ridgewood	24,916	\$104,286	189%
Wyckoff	17,206	\$103,614	188%
Demarest	4,938	\$103,286	187%
Old	5,869	\$102,127	185%
Harrington	4,895	\$100,302	182%
Norwood	6,223	\$92,447	168%
Pennington	2,713	\$90,366	164%
Ramsey	14,601	\$88,187	160%
Haddonfield	11,596	\$86,872	158%
Oakland	13,707	\$86,629	157%
Closter	8,623	\$83,918	152%
Washington	9,623	\$83,694	152%
Medford	23,568	\$83,059	151%
Mahwah	24,682	\$79,500	144%
Northvale	4,571	\$72,500	131%
Tinton	16,206	\$68,697	125%
Lawrence	31,391	\$67,959	123%
Evesham	46,858	\$67,010	122%
Dumont	17,571	\$65,490	119%
Bergenfield	26,210	\$62,172	113%
Rockaway	6,437	\$61,002	111%
Westwood	11,051	\$59,868	109%
Tavistock	30	\$58,750	107%
Haddon	7,453	\$58,424	106%
Ewing	37,057	\$57,274	104%
Audubon	9,070	\$49,250	89%
Wallington	11,558	\$45,656	83%
Lawnside	2,748	\$45,192	82%
Barrington	7,036	\$45,148	82%
Lodi	24,336	\$43,421	79%
Garfield	29,833	\$42,748	78%
Audubon	1,085	\$34,643	63%
Passaic	68,662	\$33,594	61%

Percentage of New Jersey population represented by these 40 communities: 7%

Notes: Population estimates are as of July 1, 2004. Median household income data are as of year 2000.

**Government Accountability Office May 2006 Report *Broadband Deployment Is Extensive throughout the United States, but It Is Difficult to Assess the Extent of Deployment Gaps in Rural Areas***

This report examines “the current status of broadband deployment and adoption; the factors that influence the deployment of broadband networks; the factors that influence the adoption, or purchase, of broadband service by households; and the options that have been suggested to spur greater broadband deployment and adoption.” Another objective of the report is to examine how federal programs are addressing the goal of promoting broadband ubiquity.

GAO reports that about 30 million American households subscribe to broadband service. Of those, about 29% live in urban areas, 28% in suburban areas, and 17% in rural areas. GAO examined broadband deployment and adoption in eight states – Alaska, California, Kentucky, Massachusetts, North Dakota, Ohio, Texas, and Virginia. In addition, GAO researchers interviewed public officials and industry experts.

Based on data gathered through its research, GAO constructed two econometric models – one to examine broadband deployment, and another to explain broadband adoption by households.

GAO found that part of the explanation for lower subscription rates in rural areas is that broadband is deployed less extensively in rural areas. Reasons for lower deployment in rural areas include low population density and rugged terrain, which make serving these areas more expensive than serving urban and suburban areas. In addition, technical limitations, such as the “3 mile limit” for DSL service over copper plant, eliminates this option for serving geographically isolated households.

According to GAO’s research, consumers with high income are 39% more likely to purchase broadband services than those with lower incomes. Households headed by a college-educated adult are 12% more likely to purchase broadband than households headed by someone who did not graduate from college.

GAO finds that the FCC’s data collection efforts have up to now been based on where subscribers are located. GAO recommends that an effort be made to gather data based on where broadband is deployed.

In its conclusion, GAO says, “While there are federal support mechanisms for rural broadband, it is not clear how much impact these programs are having or whether their design suggests a broad consideration of the most effective means of addressing the problem.”

**Pew Internet & American Life Project *Home Broadband Adoption 2006***

*Home Broadband Adoption*, a new report produced by the Pew Internet Project, is based on two surveys – one conducted in late 2005, and the other conducted from February to April 2006. The report describes the shifting demographics in broadband adoption, how people are using the Internet, and consumer choice in the provision of broadband services.

Pew finds that, as of March 2006, 42% of Americans had broadband connections at home, up from 30% the previous year. Much of the increase in broadband subscribership is due to dial-up users upgrading their service. However, among current dial-up Internet users, about 60% say that they are not interested in changing to broadband service.

From March 2005 to March 2006, broadband adoption grew 68% for households with income on the range of \$40,000 to \$50,000. Adoption by Blacks grew by 121%, while adoption by Hispanics and Whites grew by 46% and 35%, respectively.

Rural adoption of broadband service still trails urban and suburban adoption, but increased by 39% in the past year.

Those with a broadband connection are more active in using the Internet, in terms of time spent online and posting their own content. Broadband users from households earning less than \$50,000 annually are more likely to post content online than those from higher income households. Younger Internet users post much more material than older users. Pew finds that 35% of all Internet users, and 42% of broadband users, have posted information on the Internet.

Approximately 61 million Americans are familiar with VoIP. However, only 3% of adults Internet users utilize a VoIP service at home. Half of those who use VoIP at home maintain traditional landline telephone service as well.

Pew reports that in the past year, DSL subscribership surpassed cable broadband subscribership for the first time (50% of market share for DSL vs. 41% for cable). DSL seems to be particularly popular with the lower income tiers due to its lower price (an average monthly bill of \$32 for DSL compared to \$41 for cable). 8% of home high-speed users have wireless connections.

25% of broadband users report having only one broadband provider to choose from. In rural areas, 35% of survey respondents indicate that they have only one choice for broadband.