According to Bernstein's January 2004 projections, cable MSOs will acquire 15.5 percent of consumer primary access lines in the United States by 2008.[57] Moreover, these figures understate the competitive effects of VoIP—VoIP is a competitive alternative to wireline service and therefore constrains its pricing wherever it is *available* as a competitive alternative, not simply where a consumer has actually switched. And, as noted earlier, broadband access and therefore VoIP is available to nearly 90 percent of U.S. households from a provider other than the incumbent LEC.[58]

31. Verizon is particularly exposed to competition from the growth of VoIP. Goldman Sachs forecast in December 2003 that "the prospects for impactful (sic) market share losses by the Bells [to cable providers of VoIP] seem high" and projected that Verizon could lose 1.6 percent of its lines to cable telephony in 2004, 6.3 percent in 2005, and 12.0 percent in 2006.[59] The projected rapid growth of cable telephony and VoIP indicates that such services will compete strongly in both the local and long-distance markets.

32. The recent emergence of VoIP adds to the competitive pressure on the ILECs' voice services not only by increasing the capabilities of cable companies, but also by allowing new carriers to offer telephony over other companies' broadband facilities. Verizon faces VoIP competition from non-cable competitors, including both new ventures and traditional wireline carriers such as AT&T.

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57. *Id.* at 3.
58. *See supra* note 4.
59. *See, e.g.*, GOLDMAN SACHS, *Telecom Services: Quantifying the VoIP Threat: An Eye-Opening Exercise*, Dec. 23, 2003, at 2 tbl. 2. Those projections are based on assumptions about the percentage of cable modem customers who will purchase voice services from their cable provider, and thus reflect anticipated losses from bundled competition. *Id.* at 2.

- **Vonage:** VoIP startup Vonage offers a "Residential Basic Plan," which provides a 500-minute bundle of local, toll, and long-distance to the U.S. and Canada for $14.99, and an unlimited bundled plan for $24.99.[60] Vonage subscribers can make and receive telephone calls the same way they always have by simply plugging their phone into an analogue telephone adapter (ATI) and then into their broadband connection.[61] Vonage also offers certain novel features, such as the ability to make and receive calls from the same telephone number around the world.[62] As of October 2004, Vonage had completed co-marketing agreements with numerous new broadband cable companies, raised a total of at least $208 million in capital, and was adding 25,000 new lines a month to its network.[63] Vonage hopes to have 1 million subscribers by next summer.[64]

- **Skype:** Skype, a free peer-to-peer VoIP telephone service, launched in September 2003, and reports that 9.5 million users have downloaded its software and spent more than 1.2 billion minutes engaged in free calls within its first year of operation.[65]

- **AT&T:** AT&T launched CallVantage, its VoIP offering, in March 2004.[66] By August 2004, AT&T had expanded the offering to 121 major markets in 39 states, "demonstrat[ing] [AT&T's] commitment to get IP technology into the hands of consumers just as fast as possible."[67] UBS analyst John Hodulik expects AT&T to be "one of the real drivers" of VoIP services in the United States.[68] In October 2004, AT&T introduced a new CallVantage plan offering unlimited local service for $19.99 per month, with local toll and long-distance calling to the United States and Canada billed at $0.04 per minute.[69]

- **Cavalier Telephone:** Cavalier Telephone began offering Phonom, its VoIP service, in January 2004, and currently offers local telephone numbers in Virginia, Maryland,

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60. *See* Vonage Press Release, *Vonage Upgrades Local Unlimited Calling Plan to Premium Unlimited Plan*, October 1, 2004.

61. *Between a Rock and a Hard Place*, ECONOMIST, Oct. 9, 2003.

62. *Id.*

63. Vonage Press Release, *Vonage Completes $105 Million Series D Financing Round Led by NEA, 3i and Meritech*, Aug. 25, 2004; Vonage Press Release, *Vonage Named Among Top 15 VoIP Companies of 2004*, Oct. 12, 2004.

64. Matt Stump, *Vonage Hits the Shelves; VoIPer Adds Retail To Keep Up Growth*, MULTICHANNEL NEWS, Oct. 11, 2004.

65. Skype.com (available at http://www.skype.com); David S. Bennahum, *Can You Hear Verizon Now*, Slate.com, Oct. 21, 2003 (available at http://slate.msn.com/id/2090130/); Skype News Release, *Skype Celebrates 1 Year Anniversary*, Aug. 29, 2004.

66. AT&T News Release, *AT&T Ushers in New Era in Communication with Launch of AT&T CallVantage Service – New Jersey*, Mar. 29, 2004.

67. AT&T News Release, *AT&T CallVantage Expands to 21 New Markets in Seven States in Nationwide Deployment*, Aug. 19, 2004 (quoting AT&T senior vice president for Internet Telephony, Cathy Martine).

68. *See* Reinhardt Krause, *Internet Phone Calls Could Squeeze Prices*, INVESTOR'S BUSINESS DAILY, Dec. 12, 2003.

69. *See* AT&T News Release, *AT&T Introduces New Residential VoIP Plan*, Oct. 14, 2004.

Delaware, eastern Pennsylvania, and southern New Jersey.[70] Phonom packages include a plan with unlimited local and 500 long-distance minutes for a 6-month promotional rate of $20.99 (regularly $27.99), and an unlimited local and long-distance calling plan for a 6-month promotional rate of $24.99 (regularly $34.99).[71]

- **ISPs:** In October 2004, EarthLink began offering free VoIP service to all 1.2 million EarthLink high-speed Internet access subscribers.[72] AOL is reportedly testing a VoIP service with plans to launch in 2005.[73]

- **Other VoIP-Based Providers:** Many new companies that do not offer traditional circuit-switched voice service at all have begun providing VoIP service. While Vonage is the largest of these new providers, other companies that offer unlimited local and long-distance calling plans include: VoicePulse and Net2Phone (for $34.99);[74] FuturaVoice (for $29.99);[75] eGlobalPhone and VoIP.Net (for $29.95);[76] and Packet8, Lingo, BroadVoice, and BroadVox Direct (for $19.95).[77] Many of these companies offer promotional rates and smaller, metered packages.

Many in the investment community note the strong influence that VoIP will have in the coming years.[78] John Hodulik, an analyst for UBS Investment Services, explains that VoIP is a "deflationary factor" that "is going to put substantial pressure on pricing [for phone services]

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70. Phonom Press Release, *Phonom Is First-to-Market with Complete Residential Digital IP Telephony to Virginia, Maryland, S. New Jersey, Delaware, and Philadelphia*, Jan. 12, 2004.

71. *See* Cavalier Telephone, *Phonom Voice over Broadband Phone Service*, downloaded on Oct. 12, 2004 (available at http://www.cavtel.com/homeservice/voip/index.shtml).

72. EarthLink Press Release, *EarthLink Launches Free VoIP Service*, Oct. 5, 2004.

73. *See* Jim Hu and Ben Charny, *AOL Testing Net Phone Service*, CNET NEWS.COM, Aug. 30, 2004 (available at http://news.com.com/AOL+testing+Net+phone+service/2100-7352_3-5330183.html).

74. VoicePulse, *How Much Does VoicePulse Cost?*, downloaded on Oct. 12, 2004 (available at http://www.voicepulse.com/plans/default.aspx); Net2Phone, *VoiceLine Broadband Phone Service* (available at http://web.net2phone.com/consumer/voiceline/).

75. FuturaTechnologies, *Futura Voice Business and Residential Plans* (available at https://www.futuravoice.com/nuviovoice.php).

76. eGlobalPhone (available at http://www.eglobalphone.com); VoIP.Net, *Residential Plus Plan* (available at http://www.voip.net/bd_3resiplusplan.aspx).

77. Packet8, *Service Plans* (available at http://www.packet8.net/about/residential.asp); Lingo, *Home Plans*, (available at https://www.lingo.com/guWeb/); BroadVoice, *Rate Plans* (available at http://www.broadvoice.com/rateplans.html); BroadVox Direct (available at http://www.broadvoxdirect.com/);

78. Reinhardt Krause, *Internet Phone Calls Could Squeeze Prices*, INVESTOR'S BUSINESS DAILY, Dec. 12, 2003, at 2 (projecting that by 2008 to 2010, the Bell companies will have lost 20 to 30 percent of their current share of voice consumers); LEGG MASON, Three Trends and a Train Wreck: Consolidation, Broadband/VoIP, and Bundling are Driving Market But on Collision Course with Telecom and Media Regulation System, Nov. 17, 2003, at 9.

over the next five years."[79] In just the past month, for example, AT&T lowered the price of VoIP service—its second reduction in four months—from $35 to $30.[80] Vonage lowered the price of its unlimited plan from $35 to $30 in May 2004,[81] then again to $25 in reaction to an AT&T price cut.[82] As noted above, in October 2004, AT&T introduced a new CallVantage plan offering unlimited local service for $19.99 per month, with local toll and long-distance calling to the U.S. and Canada billed at $0.04 per minute.[83]

CONCLUSION

33. Marketplace evidence demonstrates that consumers view wireless, cable switched telephony, and VoIP as viable competitive alternatives to wireline voice service. As a result, these intermodal competitors constrain the prices of wireline voice services and, from an economic perspective, these services are all in the same product market.

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79. Reinhardt Krause, *Internet Phone Calls Could Squeeze Prices*, INVESTOR'S BUSINESS DAILY, Dec. 12, 2003 (quoting John Hodulik).

80. AT&T News Release, *AT&T Lowers Price of Its Residential VoIP Service*, Sept. 30, 2004; AT&T News Release, *AT&T CallVantage Service Expands To Serve 10 Major Markets in Florida*, June 14, 2004.

81. Vonage Press Release, *Vonage Drops Residential Premium Unlimited Plan by $5 to $29.99*, May 17, 2004.

82. *See* Justin Hyde, *AT&T, Vonage Cut Prices on Internet Calling*, Reuters, Sept. 30, 2004; Vonage Press Release, *Vonage Upgrades Local Unlimited Calling Plan to Premium Unlimited Plan*, Oct. 1, 2004.

83. *See* AT&T News Release, *AT&T Introduces New Residential VoIP Plan*, Oct. 14, 2004.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on October 18, 2004

Robert W. Crandall

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on October 18, 2004

Hal J. Singer

REPLY DECLARATION OF ROBERT W. CRANDALL AND HAL J. SINGER

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Who Pays for Universal Service? When Telephone Subsidies Become Transparent. (with Leonard Waverman) Washington: The Brookings Institution, 2000.

Cable TV: Regulation or Competition? (with Harold Furchtgott-Roth), Washington: The Brookings Institution, 1996.

Talk is Cheap: The Promise Of Regulatory Reform in North American Telecommunications. (with Leonard Waverman) Washington: The Brookings Institution, 1996.

The Extra Mile: Rethinking Energy Policy for Automotive Transportation. (with Pietro S. Nivola) Washington, DC: The Brookings Institution/Twentieth Century Fund, 1995.

Manufacturing on the Move. Washington, DC: The Brookings Institution, 1993.

After the Breakup: The U.S. Telecommunications Industry in a More Competitive Era. Washington, DC: The Brookings Institution, 1991.

Changing the Rules: Technological Change, International Competition and Regulation in Communications. (Edited with Kenneth Flamm), Washington, DC: The Brookings Institution, 1989.

Up from the Ashes: The Rise of the Steel Minimill in the United States. (With Donald F. Barnett), Washington, DC: The Brookings Institution, 1986.

Regulating the Automobile. (With Howard K. Gruenspecht, Theodore E. Keeler, and Lester B. Lave), Washington, DC: The Brookings Institution, 1986.

Controlling Industrial Pollution: The Economics and Politics of Clean Air. Washington, DC: The Brookings Institution, 1983.

The Scientific Basis of Health and Safety Regulation. (Ed. with Lester Lave), Washington, DC: The Brookings Institution, 1981.

The U.S. Steel Industry in Recurrent Crisis. Washington, DC: The Brookings Institution, 1981.

Articles, Reports, and Contributions to Edited Volumes:

"Internet Telephones: Hanging Up on Regulation, " with Robert W. Hahn, Robert E. Litan, and Scott Wallsten," *The Milken Institute Review*, 2004-III, Vol. 6 No. 3, pp. 30-34.

"Foreign Investment Restrictions as Industrial Policy: The Case of Canadian Telecommunications," (with Hal J. Singer), *Canadian Journal of Law and Technology*, Vol 3, No. 1, March 2004, pp. 19-32.

"Do Unbundling Policies Discourage CLEC Facilities-Based Investment", (with Allan T. Ingraham, and Hal J. Singer) Topics in Economic Analysis & Policy, 2004, Vol. 4: No. 1, Article 1.

"Should Regulators Set Rates to Terminate Calls on Mobile Networks?"(with J. Gregory Sidak) *Yale Journal on Regulation*, 2004, forthcoming.

" Injunctive Relief in Sherman Act Monopolization Cases," (with Kenneth G. Elzinga) *Research in Law and Economics*, Vol. 21, Elsevier, 2004, pp. 277-34.

"Telecommunications Policy and the Evolution of the Internet," in *The New Economy in East Asia and the Pacific*, Peter Drysdale, ed., RoutledgeCourzon, London, 2004, pp. 60-87.

"Does Antitrust Policy Improve Consumer Welfare? Assessing the Evidence," (with Clifford Winston) *Journal of Economic Perspectives*, Fall 2003, pp. 3-26

"The $500 Billion Opportunity: The Potential Economic Benefit of Widespread Diffusion of Broadband Internet Access" (with Charles L. Jackson), in Allan L. Shampine (ed) *Down to the Wire: Studies in the Diffusion and Regulation of Telecommunications Technologies*, Nova Science Press, Haupaugge, NY, 2003

"An End to Regulation?" in *Competition and Regulation in Utility Markets*, Colin Robinson, ed., Edward Elgar, London, 2003.

"The Case Against Asymmetric Regulation of Broadband," *Berkeley Technology Law Journal*, 2002 (with J. Gregory Sidak and Hal J. Singer).

"Universal Service, Equal Access, and the Digital Divide," in Bridging the Digital Divide. Hitachi Public Affairs Forum, California Council on Science and Technology, May 2001, pp. 29-38.

"Telecommunications Policy Reform in the United States and Canada," (with Thomas W. Hazlett) in Martin Cave and Robert W. Crandall (eds.), Telecommunications Liberalization on Two Sides of the Atlantic, AEI/Brookings Joint Center for Regulatory Studies, 2001.

"The Failure of Structural Remedies in Sherman Act Monopolization Cases," Oregon Law Review, Spring 2001, pp. 109-98.

"Sports Rights and the Broadcast Industry" (with Martin Cave), The Economic Journal, Vol. 111, February 2001, pp. F4-F26.

"Bridging the Digital Divide – Naturally," Brookings Review, Winter 2001, pp. 38-43.

"Local and Long Distance Competition: Replacing Regulation with Competition," in Randolph J. May and Jeffrey A. Eisenach (eds.), Communications Deregulation and FCC Reform: What Comes Next? Washington: The Progress and Freedom Foundation, 2000.

"Competition in U.S. Telecommunications Services: Effects of the 1996 Legislation," (with Jerry Hausman) in Sam Peltzman and Clifford Winston (eds.), Deregulation of Network Industries, Washington: The Brookings Institution, 2000.

"Competition in Telecom: The U.S. and Canadian Paths," (with Leonard Waverman) in Dale Orr and Thomas R. Wilson (eds.), The Electronic Village: Policy Issues in Telecommunications. Toronto: C.D. Howe Institute, 1998.

"New Zealand Spectrum Policy: A Model for the United States?" The Journal of Law and Economics, October 1998, pp. 821-839.

"The Impact of Telecommunications Deregulation on Midsize Business," in Gary D. Libecap (ed.), Advances in the Study of Entrepreneurship, Innovation, and Economic Growth: Legal, Regulatory, and Policy Changes that Affect Entrepreneurial Midsize Firms. Stamford,CT: JAI Press, 1998, pp. 23-42.

"Telephone Subsidies, Income Redistribution, and Economic Welfare," in Roger G. Noll and Monroe E. Price, A Communications Cornucopia: Markle Foundation Essays on Information Policy. Washington: The Brookings Institution, 1998.

"Electric Restructuring and Consumer Interests: Lessons from Other Industries," The Electricity Journal, Volume 11, No. 1, January/February 1998.

"Is it Time to Eliminate Telephone Regulation?" in Donald L. Alexander (ed.), Telecommunications Policy: Have Regulators Dialed the Wrong Number?, Westport, CT: Praeger, 1997, pp. 17-30.

"Competition and Regulation in the U.S. Video Market," Telecommunications Policy, Vol. 21, No. 7, 1997, pp. 649-660.

"Are We Deregulating Telephone Services? Think Again." Brookings Policy Brief, Number 13, March 1997

"Are Telecommunications Facilities 'Infrastructure?' If They Are, So What? Regional Science and Urban Economics, 27 (1997), pp. 161-79.

Economic Deregulation and Customer Choice: Lessons for the Electric Utility Industry. (with Jerry Ellig), Center for Market Processes, George Mason University, 1997.

"Telecom Mergers and Joint Ventures in an Era of Liberalization," in Gary Clyde Hufbauer and Erika Wada(eds.) Unfinished Business: Telecommunications After the Uruguay Round. Washington, DC: Institute for International Economics, 1997, pp. 107-24.

"From Competitiveness to Competition: The Threat of Minimills to Large National Steel Companies," Resources Policy, Vol. 22, Nos. 1/2, March/June 1996, pp.107-118.

"Clearing the Air: EPA's Self-Assessment of Clean-Air Policy," (with Frederick H. Rueter and Wilbur A. Steger), Regulation, 1996, Number 4, pp. 35-46.

"Phone Rates in a Deregulated Market,"The Brookings Review, Summer 1996.

"Competition and Regulatory Policies for Interactive Broadband Networks," (with J. Greory Sidak), Southern California Law Review, July 1995.

"The Unregulated Infobahn," (with J. Gregory Sidak), Policy (New Zealand), Winter 1995.

"Managing the Transition to Deregulation in Telecommunications," in Steven Globerman, W.T. Stanbury, and Thomas A. Wilson (eds.), The Future of Telecommunications Policy in Canada. University of British Columbia and the University of Toronto, 1995.

"Productivity Growth in the Telephone Industry Since 1984," (with Jonathan Galst) in Patrick Harker (ed.), The Service Productivity and Quality Challenge, Dodrecht: Kluwer Academic Publishers, 1995, Chapter 14.

"Cable Television: Reinventing Regulation," The Brookings Review, Winter 1994, pp. 12-15.

"Explaining Regulatory Policy" (with Clifford Winston), Brookings Papers on Economic Activity, Microeconomics, 1994, pp. 1-31.

"Pricing Issues in Telecommunications," Maine Policy Review,Vol. 3, No. 1, May 1994.

"Regulation and the "Rights" Revolution: Can (Should) We Rescue the New Deal?" Critical Review, Vol. 7 Nos. 2-3, 1993, pp. 193-204.

"Comment: Transactions Prices," Price Measurement and Their Uses, (Murray F. Foss, Marilyn E. Manser, and Allan H. Young, eds.), University of Chicago Press, 1993.

"Pollution Controls" in David R. Henderson (ed.), The Fortune Encyclopedia of Economics, New York: Warner Books, 1993.
"Relaxing the Regulatory Stranglehold on Communications," Regulation, Summer 1992, pp. 26-35.

"Regulating Communications: Creating Monopoly While Protecting Us From It," The Brookings Review, Summer 1992, Volume 10, No. 3, pp. 34-39.

"Policy Watch: Corporate Average Fuel Economy Standards," Journal of Economic Perspectives, Spring 1992, pp. 171-80.

"Why Is the Cost of Environmental Regulation So High?" Center for the Study of American Business. St. Louis: Washington University, Policy Study No. 110, February 1992.

"Liberalization Without Deregulation: Telecommunications Policy During the 1980s," Contemporary Policy Issues, October 1991.

"Halfway Home: U.S. Telecommunications (De)Regulation in the 1970s and 1980s," in Jack High (ed.), Regulation: Economic Theory and History. Ann Arbor: The University of Michigan Press, 1991.

"Efficiency and Productivity," in Barry G. Cole (ed.), After the Breakup: Assessing the New Post-AT&T Divestiture Era. New York: Columbia University Press, 1991.

"The Politics of Energy: New Fuel Economy Standards?" (with John D. Graham), The American Enterprise, March/April 1991.

"The Clean Air Act at Twenty," Journal of Regulation and Social Costs, September 1990.

"Fragmentation of the Telephone Network" in Paula Newberg (ed.), New Directions in Telecommunications Policy. Durham, NC: Duke University Press, 1989.

"The Effect of Fuel Economy Standards on Automobile Safety," (with John D. Graham), Journal of Law and Economics, April 1989.

"Surprises from Telephone Deregulation and the AT&T Divestiture," American Economic Review, May 1988, pp. 323-327.

"The Regional Shift of U.S. Economic Activity" in Robert E. Litan, et al., American Living Standards, Washington, DC: The Brookings Institution, 1988.

"Deregulation and Divestiture in the U.S. Telecommunications Sector" in Economic Deregulation: Promise and Performance. Proceedings of the 1987 Donald S. MacNaughton Symposium, Syracuse University, 1988.

"Whatever Happened to Deregulation?" in David Boaz (ed.), Assessing the Reagan Years. Washington, DC: The CATO Institute, 1988.

"Regulatory Reform: Are We Ready for the Next Phase?" in The Brookings Review, The Brookings Institution, Winter 1988/89.

"Telecommunications Policy in the Reagan Era," Regulation, Washington, DC: American Enterprise Institute, 1988, Number 3, pp. 18-19.

"A Sectoral Perspective: Steel" in Robert M. Stern, et.al. (eds.), Perspectives on a U.S.-Canadian Free Trade Agreement, Washington, DC: The Brookings Institution, 1987.

"The Effects of U.S. Trade Protection for Autos and Steel," Brookings Papers on Economic Activity, 1987:2, The Brookings Institution.

"Has the AT&T Breakup Raised Telephone Rates?" in The Brookings Review, Winter 1987.

"Public Policy and the Private Auto," (with Theodore E. Keeler) in Gordon, et.al. (eds.), Energy: Markets and Regulation, Essays in Honor of M.A. Adelman. Cambridge, MA: MIT Press, 1986

"Materials Economics, Policy, and Management: An Overview," with Michael B. Bever, in Encyclopedia of Materials Science and Engineering, Pergamon Press, 1986.

"Metals Industries: International Structure," in Encyclopedia of Materials Science and Engineering, Pergamon Press, 1986.

"The Steel Industry in Transition," Materials and Society, Pergamon Journals Ltd., Vol. 10, No. 2, 1986.

"The Public Interest in Metals Policy," in David A. Gulley and Paul Duby (eds.), The Changing World Metals Industries. New York: Gordon and Breach, 1986.

"Economic Rents as a Barrier to Deregulation," The CATO Journal, Spring/Summer 1986.

"The Transformation of U.S. Manufacturing," Industrial Relations, Spring 1986."Investment and Productivity Growth in the Steel Industry: Some Implications for Industrial Policy," in Walter H. Goldberg, Ailing Steel: The Transoceanic Quarrel, Gower, 1986.

"The EC-US Steel Trade Crisis," in Loukas Tsoukalis (ed.), Europe, America, and the World Economy, Oxford: Basil Blackwell, 1986.

"Why Should We Regulate Fuel Economy at All?" in The Brookings Review, Spring 1985.

"An Acid Test for Congress," Regulation, September/December 1984.

"Import Quotas and the Automobile Industry: The Costs of Protectionism," The Brookings Review, Summer 1984.

"Automobile Safety Regulation and Offsetting Behavior: Some New Empirical Estimates," (with John D. Graham), American Economic Review, Papers and Proceedings, May 1984.

"The Political Economy of Clean Air: Practical Constraints on White House Review," in V. Kerry Smith, Environmental Policy Under Reagan's Executive Order: The Role of Benefit-Cost Analysis, University of North Carolina Press, 1984.

"The Marketplace: Economic Implications of Divestiture," (with Bruce M. Owen), in Harry M. Shooshan III, Discounting Bell: The Impact of the AT&T Divestiture, Pergamon Press, 1984.

"Environmental Policy in the Reagan Administration," (with Paul R. Portney), in Paul R. Portney (ed.), Natural Resources and the Environment: The Reagan Approach, The Urban Institute and Resources for the Future, 1984.

"The Emerging Competition in the U.S. Telecommunications Market" in New Opportunities for Entrepreneurship, The Kiel Institute, 1984.

"Deregulation: The U.S. Experience," Zeitschrift fur die gesamte Staatswissenshaft, October 1983, pp. 419 - 434.

Review of John Zysman and Laura Tyson, American Industry in International Competition, Science, Vol. 222, October 21, 1983.

"Air Pollution, Environmentalists, and Coal Lobby," in Roger G. Noll and Bruce M. Owen (eds.), The Political Economy of Deregulation, American Enterprise Institute, 1983.

"The Use of Environmental Policy to Reduce Economic Growth in the Sun Belt: The Role of Electric-Utility Rates" in Michael A. Crew (ed.), Regulatory Reform and Public Utilities, Lexington Books, 1982.

"The Cost of Automobile Safety and Emissions Regulation to the Consumer: Some Preliminary Results," (with Theodore E. Keeler and Lester B. Lave), American Economic Review, May 1982.

"Environmental Policy," Regulation, March/April 1982.

"Has Reagan Dropped the Ball?" in Regulation, November/December 1981.

"The Use of Cost-Benefit Analysis in Regulatory Decision-Making," Annals New York Academy of Sciences, 1981."The Deregulation of Cable Television," (with Stanley M. Besen), Law and Contemporary Problems, Duke University School of Law, Vol. 44, No. 1, Winter 1981.

"The Impossibility of Finding a Mechanism to Ration Health Care Resources Efficiently" in A New Approach to the Economics of Health Care, Mancur Olson (ed.), American Enterprise Institute for Public Policy Research, 1981.

"Pollution Controls and Productivity Growth in Basic Industries" in Productivity Measurement in Regulated Industries, Academic Press, 1981.

"Where is the Public Interest in Broadcasting Regulation?" in Regulation and the Future Economic Environment-Air to Ground, Charles F. Phillips, Jr. (ed.), December 1980.

"The Environmental Protection Agency," (On Saving the Kingdom: Advice for the President-Elect), Regulation, November/December 1980.

"Steel Imports: Dumping or Competition?" in Regulation, July/August 1980.

"Regulation and Productivity Growth" in Proceedings: Conference on Productivity, Federal Reserve Bank of Boston, Martha's Vineyard, June 1980.

"The Prospects for Regulatory Reform," Government Regulation: New Perspectives, Andrew Blair, ed., Pittsburgh: University of Pittsburgh, 1980.

"The Economics of the Current Steel Crisis in OECD Member Countries" in Steel in the 80's, Organisation for Economic Co-operation and Development, Paris, 1980.

"Environmental Control Is Out of Control," Chemical and Engineering News, Vol. 57, April 23, 1979.

"Paying for Government Policy Through the Price Level" in Clarence C. Walton (ed.), Inflation and National Survival, 1979.

"Is Government Regulation Crippling Business?" in Saturday Review, January 20, 1979.

"Federal Government Initiatives to Reduce the Price Level," Brookings Papers on Economic Activity, 1978:2.

"Competition and 'Dumping' in the U.S. Steel Market," Challenge, July/August 1978.

"Regulation of Television Broadcasting: How Costly is the 'Public Interest'?" in Regulation, January/February 1978.
"Placing a Value on the Electromagnetic Spectrum: A Suggested Approach for FCC Decision-Making," Proceedings of the Conference on Telecommunications Policy Research, Airlie House, 1977.

"Theoretical Issues in the Regulation of Communications Common Carriage" in Rate of Return Regulation, FCC Future Planning Conference, July 1976.

"The Postwar Performance of the Motion Picture Industry," The Antitrust Bulletin, Spring 1975.

"An Econometric Model of the Low-Skill Labor Market," (with C.D. MacRae and Lorene Y.L. Yap), The Journal of Human Resources, Winter 1975.

"The Economic Case for a Fourth Commercial Television Network," Public Policy, Harvard University Press, Fall 1974.

"The Profitability of Cable Television: An Analysis of Acquisition Prices," The Journal of Business, University of Chicago, October 1974.

"A Reexamination of the Prophecy of Doom for Cable Television," (with Lionel L. Fray), The Bell Journal of Economics and Management Science, Spring 1974.

"Monopoly," The Dictionary of American History, Charles Scribner's & Sons, 1973.

"FCC Regulation, Monopsony, and Network Television Program Costs," The Bell Journal of Economics and Management Science, Autumn 1972.

Study Guide for Basic Economics (with R.S. Eckaus), Little, Brown and Company, 1972.

Contemporary Issues in Economics: Selected Readings (with R.S. Eckaus), Little, Brown and Company, 1972.

"Economic Subsidies in the Urban Ghetto," (with C.D. MacRae), Social Science Quarterly, December 1971.

"The Economic Effect of Television-Network Program 'Ownership'," The Journal of Law and Economics, Vol. XIV, October 1971.

"The Decline of the Franchised Dealer in the Automobile Industry," The Journal of Business, University of Chicago, January 1970.

"Motor Vehicle Repair, Repair-Parts Production, and the Franchised Vehicle Dealer," Hearings: The Automobile Industry, U.S. Senate Antitrust Subcommittee of the Committee on the Judiciary, 1969.

"Vertical Integration and the Market for Repair Parts in the United States Automobile Industry," The Journal of Industrial Economics, Oxford: Basil Blackwell, July 1968.

REPLY DECLARATION OF ROBERT W. CRANDALL AND HAL J. SINGER

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EDUCATION

THE JOHNS HOPKINS UNIVERSITY, Ph.D., 1999; M.A. (Economics), 1996.

TULANE UNIVERSITY, B.S. *magna cum laude* (Economics), 1994.

CURRENT EMPLOYMENT

CRITERION ECONOMICS, L.L.C., Washington, D.C.: President, 2004-present. Senior Vice President, 1999-2004.

EMPLOYMENT HISTORY

LECG, INC., WASHINGTON, D.C.: Senior Economist, 1998-99.

U.S. SECURITIES AND EXCHANGE COMMISSION, OFFICE OF ECONOMIC ANALYSIS, WASHINGTON, D.C.: Staff Economist, 1997-98.

THE JOHNS HOPKINS UNIVERSITY, ECONOMICS DEPARTMENT, BALTIMORE: Teaching Assistant, 1996-98.

AUTHORED BOOKS

Broadband in Europe: How Brussels Can Wire the Information Society, co-authored with Dan Maldoom, Richard Marsden, and J. Gregory Sidak (forthcoming Kluwer/Springer Press 2005).

JOURNAL ARTICLES

Uberregulation without Economics: The World Trade Organization's Decision in the U.S.-Mexico Arbitration on Telecommunications Services, 57 FEDERAL COMMUNICATIONS LAW JOURNAL (forthcoming 2004), co-authored with J. Gregory Sidak.

The Secondary Market for Life Insurance Policies: Uncovering Life Insurance's "Hidden" Value, 6 MARQUETTE ELDER'S ADVISOR __ (forthcoming 2004), co-authored with Neil A. Doherty and Brian A. O'Dea.

Do Unbundling Policies Discourage CLEC Facilities-Based Investment?, 4 TOPICS IN ECONOMIC ANALYSIS & POLICY (2004), co-authored with Robert W. Crandall and Allan T. Ingraham.

Foreign Investment Restrictions as Industrial Policy, 3 CANADIAN JOURNAL OF LAW AND TECHNOLOGY 19 (2004), co-authored with Robert W. Crandall.

Regulating the Secondary Market for Life Insurance Policies, 21 JOURNAL OF INSURANCE REGULATION 63 (2003), co-authored with Neil A. Doherty.

Interim Pricing of Local Loop Unbundling in Ireland: Epilogue, 4 JOURNAL OF NETWORK INDUSTRIES 119 (2003), co-authored with J. Gregory Sidak.

The Benefits of a Secondary Market for Life Insurance, 38 REAL PROPERTY, PROBATE & TRUST JOURNAL 449 (2003), co-authored with Neil A. Doherty.

The Empirical Case Against Asymmetric Regulation of Broadband Internet Access, 17 BERKELEY TECHNOLOGY LAW JOURNAL 954 (2002), co-authored with Robert W. Crandall and J. Gregory Sidak.

How Can Regulators Set Nonarbitrary Interim Rates? The Case of Local Loop Unbundling in Ireland, 3 JOURNAL OF NETWORK INDUSTRIES 273 (2002), co-authored with J. Gregory Sidak.

Vertical Foreclosure in Broadband Access, 49 JOURNAL OF INDUSTRIAL ECONOMICS (2001) 299 (with Daniel L. Rubinfeld).

Open Access to Broadband Networks: A Case Study of the AOL/Time Warner Merger, 16 BERKELEY TECHNOLOGY LAW JOURNAL 640 (2001), co-authored with Daniel L. Rubinfeld.

Cable Modems and DSL: Broadband Internet Access for Residential Customers, 91 AEA PAPERS AND PROCEEDINGS 302 (2001), co-authored with Jerry A. Hausman and J. Gregory Sidak.

Residential Demand for Broadband Telecommunications and Consumer Access to Unaffiliated Internet Content Providers, 18 YALE JOURNAL ON REGULATION 1 (2001), co-authored with Jerry A. Hausman and J. Gregory Sidak.

Determining the Source of Inter-License Synergies in Two-Way Paging Networks, 18 JOURNAL OF REGULATORY ECONOMICS 59 (2000).

A General Framework for Competitive Analysis in the Wireless Industry, 50 HASTINGS LAW REVIEW 1639 (2000), co-authored with J. Gregory Sidak and David Teece.

Capital Raising in Offshore Markets, 23 JOURNAL OF BUSINESS & FINANCE 1181 (1999), co-authored with Ian Gray and Reena Aggarwal.

WORKING PAPERS

Inter-City Competition for Retail Trade in North Texas: Can a TIF Generate Incremental Tax Receipts for the City of Dallas? (Sep. 2004), co-authored with Thomas G. Thibodeau and Allan T. Ingraham.

An Economic Assessment of the Weight-Based CAFE Standard Proposed by the National Highway Traffic Safety Administration (Apr. 2004), co-authored with Robert W. Crandall and Allan T. Ingraham.

How Common Are "Conflicts of Interests" in the Investment Banking Industry? (Dec. 2003), co-authored with Charles W. Calomiris.

An Analysis of Bidding Behavior in the Closed and Open Segments of FCC Auction #35 (May 2002), co-authored with Peter Cramton and Allan T. Ingraham.

Does Clustering by Incumbent MSOs Deter Entry by Overbuilders? (July 2002).

TESTIMONY

Expert Declaration of Robert W. Crandall and Hal J. Singer on behalf of SBC Communications Inc., In the Matter of EarthLink Inc. v. SBC Communications, Inc., No. EB-04-MD-006 (June 15, 2004).

Expert Rebuttal Report of Hal J. Singer on behalf of the Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation, In Burlington Northern and Santa Fe Railway Company v. Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation (D. Mont. Feb. 2004) (No. CV-01-34-BLG).

Expert Declaration of Hal J. Singer on behalf of the Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation, In Burlington Northern and Santa Fe Railway Company v. Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation (D. Mont. Dec. 2003) (No. CV-01-34-BLG).

Expert Declaration of Hal J. Singer on behalf of Tomas H. Miguens, In Q International Courier v. Tomas H. Miguens (S.D.N.Y. Dec. 2003) (No. 02 Civ. 5278-JSM).

Expert Declaration of Robert W. Crandall and Hal J. Singer on behalf of Bell Canada Enterprises, In the Matter of Hearings before the Standing Committee On Industry, Science And Technology of the House of Commons of Canada Pursuant to Standing Order 108(2), Consideration of Foreign Investment Restrictions Applicable to Telecommunications Common Carriers (Feb. 20. 2003).

Letter Concerning Spectrum Auction 35 to the Honorable Michael K. Powell, Chairman, Federal Communications Commission, from Peter C. Cramton, Robert W. Crandall, Robert W. Hahn, Robert G. Harris, Jerry A. Hausman, Thomas W. Hazlett, Douglas G. Lichtman, Paul W. MacAvoy, Paul R. Milgrom, Richard Schmalensee, J. Gregory Sidak, Hal J. Singer, Vernon L. Smith, William Taylor, and David J. Teece (Aug. 16, 2002).

Expert Declaration of J. Gregory Sidak and Hal J. Singer on behalf of The Walt Disney Company, *et al.*, In the Matter of Nondiscrimination in the Distribution of Interactive Television Services over Cable, Notice of Inquiry, Federal Communications Commission, CS Dkt. No. 01-7 (May 11, 2001).

Expert Declaration of Hal J. Singer on behalf of Allegheny Communications, Inc., In Allegheny Communications Inc. v. F.C.C. (D.C. Cir. Dec. 2000) (No. 00-1524).

WHITE PAPERS

Inter-City Competition for Retail Trade in North Texas: Can a TIF Generate Incremental Tax Receipts for the City of Dallas? (prepared for Harvest Partners July 16, 2004), co-authored with Thomas G. Thibodeau and Allan T. Ingraham.

An Accurate Scorecard of the Telecommunications Act of 1996: Rejoinder to the Phoenix Center Study No. 7 (prepared for BellSouth Jan. 6, 2004), co-authored with Robert Crandall.

Competition in Broadband Provision and Implications for Regulatory Policy (prepared for the Alcatel, British Telecom, Deutsche Telekom, Ericsson, France Telecom, Siemens, Telefónica de España, and Telecom Italia Oct. 15, 2003), co-authored with Dan Maldoom, Richard Marsden, and Gregory Sidak.

The Effect of Ubiquitous Broadband Adoption on Investment, Jobs, and the U.S. Economy (prepared for Verizon Sept. 17, 2003), co-authored with Robert W. Crandall.

The Deleterious Effect of Extending the Unbundling Regime on Telecommunications Investment (prepared for BellSouth July 10, 2003), co-authored with Robert W. Crandall.

NEWSPAPER ARTICLES

No Two-Tier Telecommunications, NATIONAL POST, Mar. 7, 2003, at FP15, co-authored with Robert W. Crandall.

MEMBERSHIPS

American Economics Association

PERSONAL INFORMATION

American citizen, born March 31, 1972. Married to Ingrid Arraut Singer. Two daughters: Alexis and Kayla. Resident of Oakton, Virginia.

September 28, 2004

REPLY DECLARATION OF ROBERT W. CRANDALL AND HAL J. SINGER

EXHIBIT 3

EXHIBIT 3: SUMMARY OF FCC'S FINDINGS ON WIRELESS DISPLACEMENT

CMRS Report (Year)	Summary	Source
Ninth (2004)	One analyst estimated that 23 percent of voice minutes in 2003 were wireless, up from 7 percent in 2000.	David Janazzo, Wendy Liu, and Linda Mutschler, The Next Generation VIII, Merrill Lynch, Global Securities Research & Economics Group, Mar. 15, 2004 at 40.
Ninth (2004)	The Census Bureau estimates that 5 to 6 percent of all households now have wireless phones only.	Tucker, Clyde, Michael Brick, and Brian Meekins, "Telephone Service in U.S. Households in 2004," paper presented at the 2004 Annual Meeting of the American Association for Public Opinion Research.
Eighth (2003)	In 1996, wireless accounted for 5 percent of total telecommunications revenues. It now accounts for 30 percent.	*Health of the Telecommunications Sector: A Perspective from Investors and Economists, before the House Subcommittee on Telecommunications and the Internet*, 108th Cong. (Feb. 5, 2003) (statement of Blake Bath, Managing Partner, Lehman Brothers)
Eighth (2003)	Wireless has now displaced about 30 percent of total wireline minutes.	Cannon Carr and Gregor Dannacher, *Can Wireline Cannibalization Save Wireless ARPU in 2003?*, CIBC WORLD MARKETS, Dec. 11, 2002, at 8.
Eighth (2003)	For the average household, wireless represents 27 percent of total telecommunications expenditures. The breakdown: Local (26 percent); Local Toll (2 percent); Long Distance (8 percent); Wireless (27 percent); Cable/Satellite (27 percent); Internet (11 percent).	*TNS Telecoms Data ranks Verizon the Third Largest Long Distance Provider in the U.S., Surpassing Sprint*, News Release, TNS Telecoms, Jan. 7, 2003.
Eighth (2003)	For Verizon, SBC, and BellSouth, business and consumer access lines declined by 3.6, 4.1, and 3.2 percent, respectively, in 2002, for a total decrease of 5.5 million lines.	Reinhardt Krause, *Local Bells Losing Second Lines as Users Go Broadband, Wireless*, INVESTOR'S BUS. DAILY, Feb. 11, 2003, at A01.
Eighth (2003)	The number of payphones has declined from 2.7 million in the mid-1990s to about 1.9 million today.	Yuki Noguchi, *Requiem for the Payphone: As Cell Phone Use Increases, an Icon gradually Dies*, WASHINGTON POST, Dec. 30, 2002, at E1.
Seventh (2002)	Analysts estimate that 3 to 5 percent of wireless customers use their wireless phones as their only phone.	*Carriers Said to Need New Tactics to Combat LD Substitution*, COMM. DAILY, Mar. 15, 2002 (citing Yankee Group analyst Knox Bricken's estimate of 3 percent).
Seventh (2002)	According to CTIA, about 2.2 percent of people in the United States have abandoned their wireline phones in favor of wireless phones or other wireless devices, which translates into roughly 5 percent of all wireless subscribers.	Yuki Noguchi, *More Cell-Phone Users Cut Ties to Traditional Service*, WASHTECH.COM, Dec. 27, 2001 (citing CTIA).
Seventh (2002)	20 percent of residential customers had replaced "some" wireline phone usage with wireless, and that 11 percent had replaced a "significant percentage."	*Carriers Said to Need New Tactics to Combat LD Substitution*, COMM. DAILY, Mar. 15, 2002 (citing Yankee Group analyst Knox Bricken).
Seventh (2002)	Almost one in five mobile telephony users regard their wireless phone as their primary phone.	Michelle Kessler, *18% See Cellphones as Their Main Phone*, USA TODAY, Feb. 1, 2002.
Seventh (2002)	The number of residential access lines served by BellSouth, SBC, and Verizon dropped by almost 3 percent during 2001, more than 2.5 million lines.	Linda Mutschler *et al.*, *The Next Generation VII*, Merrill Lynch, Equity Research, Feb. 21, 2003, at 34.
Seventh (2002)	By the end of 2001, wireless had displaced 10 million access lines, primarily by consumers choosing wireless over installing additional access lines.	*It's a Wireless Boom as More People Cut the Cord*, News Release, IDC, Jan. 8, 2002.
Seventh (2002)	Another study estimates that 2 million households replaced an access line with a wireless phone in the first six months of 2001.	Margaret Schoener, *U.S. Residential Wireless Voice Access Lines Head South, Revenue Heads North*, Gartner, Inc., Aug. 31, 2001, at 1.
Seventh (2002)	20 percent of AT&T's customers, or 5 million people, have replaced some wireline long distance usage with wireless.	*Carriers Said to Need New Tactics to Combat LD Substitution*, COMM. DAILY, Mar. 15, 2002 (citing Yankee Group analyst Knox Bricken).
Sixth (2001)	About 3 percent of mobile telephone subscribers rely on their wireless phone as their only phone.	Judy Saries, *Wireless Users Hanging Up On Landline Phones*, NASHVILLE BUS. J., Feb. 2, 2001.
Sixth (2001)	CTIA estimates that the percent of mobile telephone subscribers who rely on their wireless phone as their only phone could be as high as 5 percent, based on a February 2000 survey it sponsored.	*Consumers Replacing Landline Phones with Wireless*, KNIGHT RIDDER/TRIBUNE BUS. NEWS, Jan. 10, 2001, *available in* 2001 WL 2837499.
Sixth (2001)	77 percent of wireless customers said they use their phones primarily for personal calls.	*Majority of Customers Use Cell Phones for Personal Calls*, RCR WIRELESS NEWS, Jan. 29, 2001, at 29 (citing a survey conducted by Cellular One Group).

CMRS Report (Year)	Summary	Source
Sixth (2001)	Three in 10 wireless phone users stated they would rather give up their home wireline connection than their wireless phone. Among wireless users aged 18 to 34 years old, that figure rose to 45 percent.	*Will Wireless Phones Make Traditional Home Telephones Obsolete?*, News Release, Consumer Electronics Association, Apr. 6, 2000.
Sixth (2001)	In January 2000, 12 percent of respondents said they purchased a wireless phone instead of installing an additional wireline phone.	Callie Nelson, *Replacing Landline with Wireless: How Far Can It Go?*, IDC, Dec. 2000 (citing IDC's *Personal Wireless Communications User Survey*, 2000).
Fifth (2000)	In September 1999, 2 percent of survey respondents indicated that their mobile phone functions as their only phone.	*PCIA and The Yankee Group Release Largest Wireless Consumer Survey at PCS '99*, PCIA, News Release, Sept. 23, 1999.

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Unbundled Access to Network Elements	)	WC Docket No. 04-313
	)	
Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers	)	CC Docket No. 01-338

REPLY DECLARATION OF JEFFREY H. ROHLFS AND JOSEPH H. WEBER SUBMITTED IN SUPPORT OF THE COMMENTS OF THE VERIZON TELEPHONE COMPANIES

1. My name is Jeffrey H. Rohlfs. I am a Ph.D. economist who has specialized in the telecommunications industry. For the past 21 years I have been a consultant. Before that, I was Department Head for Economic Modeling Research at Bell Labs. I have made numerous filings before the FCC regarding ground rules for competition, pricing of interconnection and unbundled network elements, and regulatory reform. I have also consulted for regulatory commissions in many foreign countries on these same issues. My CV is attached to this declaration. *See* Exhibit 2.

2. My name is Joseph H. Weber. I am a telecommunications engineer with over 30 years of experience in systems engineering and network planning at AT&T and Bell Labs. For the past 15 years I have been consulting on telecommunications matters for clients in the United States and abroad, focusing on the impact of technology on policy issues. I have provided testimony on telecommunications technology issues in a number of state proceedings as well as before the FCC. My CV is attached to this declaration. *See* Exhibit 3.

3. At Verizon's request, we have examined the model named "Impairment Analysis Tool" or "IAT" that was submitted by Dr. Michael Pelcovits on behalf of MCI in this proceeding. This model purports to analyze a CLECs' potential costs and revenues if it were to enter a market using a UNE-loop strategy with its own switches and to determine whether a CLEC could enter profitably. Dr. Pelcovits asserts that this model demonstrates "that entry is not likely to be profitable under a wide range of circumstances in virtually all markets." (Pelcovits Decl. ¶ 107.)

4. As we discuss in more detail in the attached report (Exhibit 1), a potential deployment model, such as IAT, cannot, even in principle, demonstrate that competition *would* be impaired in the absence of unbundled switching and/or transport. At most, such a model could demonstrate that competition *using one particular network configuration* is not viable. It says nothing about the viability of competition under alternative network configurations, including inter-modal alternatives.

5. Furthermore, even in the network configuration posited in IAT, Dr. Pelcovits falls far short of demonstrating that competition would be non-viable. IAT contains a number of errors and indefensible assumptions that undermine Dr. Pelcovits' conclusion. Among other things, the model

   - Substantially underestimates CLEC revenues by assuming they will be based on ILEC revenues, even though the current prices of the actual calling plans CLECs offer today in the marketplace yield significantly higher revenues;
   - Assumes customer churn rates that are significantly higher than those CLECs currently experience;
   - Assumes costs for DLC equipment that are too high; and
   - Improperly analyzes the profitability of operating in an additional wire center by looking at fully allocated costs rather than incremental costs.