

WILLIAM HERNDON LEHR
Curriculum Vitae

EDUCATION

Ph.D., Economics, Stanford University, 1992.

M.B.A., with distinction, The Wharton School, University of Pennsylvania, 1984.

M.S.E., Chemical Engineering, University of Pennsylvania, 1984.

B.S., Chemical Engineering, *cum laude*, University of Pennsylvania, 1979.

B.A., European History, *magna cum laude*, University of Pennsylvania, 1979.

Academic Honors: Graduate Student Research Award, Telecommunications Policy Research Conference, 1991; Lynde and Harry Bradley Foundation Fellowship, 1990; Stanford Fellowship, 1987

PROFESSIONAL EXPERIENCE

MIT Internet Telecoms Convergence Consortium, Center for Technology, Policy and Industrial Development, Massachusetts Institute of Technology (Cambridge, MA), Research Associate, January 1997-present, Associate Director, August 1999-present.

Graduate School of Business, Columbia University (New York, NY), Associate Research Scholar of Finance and Economics, 1997-2002; Assistant Professor of Finance and Economics, July 1991 to December 1996.

RAND Corporation (Santa Monica, CA), Graduate Student Intern, Summer 1990.

Economic Analysis Group, Ltd. (Washington, DC), Senior Consultant, 1985-1987.

M.C.I. Telecommunications (Washington, DC), Manager of Financial Analysis, 1985; Senior Financial Analyst, 1984.

Office of Management and Budget, National Security Division (Washington, DC), Graduate Student Intern, Summer 1983.

Putnam, Hayes and Bartlett (Cambridge, MA), Research Associate 1980-1982.

TEACHING EXPERIENCE

Internet Pricing and Quality of Service

Internet Commerce

Internet Economics 101

Internet Telephony Tutorial

Internet Commerce Video Course

Economics of Telecommunications Pricing
Economics and Strategy in Media Industries
Economics of Strategic Management
Managerial Economics
Theory of the Firm (teaching assistant for Paul Milgrom)

PAPERS and PUBLICATIONS

"TELRIC and the Cost of Capital," with R. Glenn Hubbard, white paper prepared on behalf of AT&T for *ex parte* submission to the FCC, December 2003.

"Coordinating User and Device Behavior in Wireless Grids," with Lee McKnight and James Howison, draft paper, Syracuse University, October 2003.

"Local Government Broadband Initiatives," with Sharon Eisner Gillette and Carlos Osorio, paper prepared for the 31st Annual Telecommunications Policy Research Conference, George Mason University, September 2003.

"Economic Case for Voluntary Structural Separation," with R. Glenn Hubbard, paper prepared for the 31st Annual Telecommunications Policy Research Conference, George Mason University, September 2003.

"Software Radio: Implications for Wireless Services, Industry Structure, and Public Policy," with Sharon Gillett and Fuencisla Merino, *Communications and Strategies*, IDATE, Issue 49 (1st Quarter 2003) 15-42.

"Wireless Internet Access: 3G vs. WiFi?," with Lee McKnight, *Telecommunications Policy*, 27 (2003) 351-370.

"Local Government Stimulation of Broadband: Effectiveness, E-Government, and Economic Development," with David Clark, Sharon Gillett, Marvin Sirbu, and Jane Fountain, A White Paper Prepared from A Proposal to the U.S. National Science Foundation Program on Digital Government, Massachusetts Institute of Technology, November 7, 2002.

"Stimulating Investment and the Telecommunications Act of 1996," with Robert Willig, John Bigelow, and Stephen Levinson, white paper prepared on behalf of AT&T, October 2002.

Cyber Policy and Economics in an Internet Age, co-edited with Lorenzo Pupillo, Kluwer Academic Press: Norwell, MA, November 2002.

"Optical Networks and the Future of Broadband Services," with Pedro Ferreira and Lee McKnight, *Technological Forecasting and Social Change*, 69 (2002) 741-758.

"Show me the money: contracts and agents in service level agreement markets," with Lee McKnight, *info*, vol. 4, no. 1 (2002) 24-36.

"Promoting Broadband Investment and Avoiding Monopoly," with Robert Hall, white paper prepared on behalf of AT&T, February 2002, available from <http://www.sandhillecon.com/research/>.

"Best Effort versus Spectrum Markets: Wideband and Wi-Fi versus 3G MVNOs?" with Raymond Linsenmayer and Lee McKnight, forthcoming in Proceedings of the 29th TPRC: Research Conference on Information, Communication, and Internet Policy, edited by Shane Greenstein and Lorrie Cranor.

"The Disruptive User – Internet Appliances and the Management of Complexity," with Sharon Gillett, David Clark, and John Wroclawski, *BT Technology Journal*, Vol. 19, No. 4 (October 2001) 40-45.

"Rescuing Competition to Stimulate Telecom Growth," with Robert Hall, white paper prepared on behalf of AT&T, October 2001, available from <http://www.sandhillecon.com/hlpaper/>.

"Do Appliances Threaten Internet Innovation?" with Sharon Gillett, David Clark, and John Wroclawski, *IEEE Communications Magazine*, vol. 39, no. 10 (October 2001) 46-51.

"No Optical Illusion: A market for Bandwidth is Emerging," with Lee McKnight, *WorldLink*, World Economic Forum, May/June 2001.

Book Review of *Letting Go: Deregulating the Process of Regulation* by Alfred Kahn, *Journal of Economic Literature*, vol. XXXIX (September 2001) 943-944.

"Competition in Telecommunications and Economic Growth," with Jim Glassman, report prepared for TechCentral Station, July 2001 (<http://www.techcentralstation.com>)

"The Economics of the Tausin-Dingell Bill: Theory and Evidence," with Jim Glassman, report prepared for TechCentral Station, June 2001 (<http://www.techcentralstation.com>)

"Assessing the Cost of Capital for a Standalone Transmission Company," with Michael Cragg and Ron Rudkin, *The Electricity Journal*, Volume 14, Issue 1, January-February 2001, Pages 80-88.

Internet Telephony, (co-edited with David Clark and Lee McKnight), Cambridge, MA: MIT Press, 2001.

"A New Theory of the Internet Firm," in Creative Destruction: Business Strategies for the Global Internet, edited by Lee McKnight, Paul Vaaler, and Raul Katz, Cambridge, MA: MIT Press, 2001.

"A Taxonomy of Internet Appliances," with Sharon Gillett, David Clark, and John Wroclowski, paper presented to the Twenty-Eighth Annual Telecommunications Policy Research Conference, September 25-27, 2000, Alexandria, VA

"A Broadband Access Market Framework: Towards Consumer Service Level Agreements," with Lee McKnight, paper presented to the Twenty-Eighth Annual Telecommunications Policy Research Conference, September 25-27, 2000, Alexandria, VA

"The Tax on Talking Is a Luxury We Can No Longer Afford," with R. Glenn Hubbard, paper prepared for submission to the U.S. Senate, May 2000.

"Telecommunications, the Internet, and the Cost of Capital," with R. Glenn Hubbard, in The Internet Upheaval, edited by Ingo Vogelsang and Ben Compaine, MIT Press: Cambridge, 2000.

"Rapporteur's Report for Next Generation Internet Policy Workshop, Brussels, September 1999," <http://rpcp.mit.edu/NGIPolicy>, February 2000.

"Provisioning for Bursty Internet Traffic: Implications for Industry Structure," with David Clark, paper presented to Workshop on Internet Service Quality Economics, Massachusetts Institute of Technology, December 2-3, 1999, Cambridge, MA

"Availability of Broadband Internet Access: Empirical Evidence," with Sharon Gillett, paper presented to the Twenty-Seventh Annual Telecommunications Policy Research Conference, September 25-27, 1999, Alexandria, VA

"Telecommunication Regulation in the United States and Europe: The Case for Centralized Authority," with Thomas Kiessling," in *Competition, Regulation and Convergence: Trends in Telecommunications Policy Research*, S. E. Gillett and I. Vogelsang (Eds.), Lawrence Erlbaum Associates, Mahwah, NJ, 1999.

"The Flexible Specialization Path of the Internet," with Petros Kavassalis, in *Convergence in Communications and Beyond*, edited by Erik Bohlin, Karolina Brodin, Anders Lundgren, and Bertil Thorngren, Amsterdam: Elsevier Science, October, 2000.

"Next Generation Bandwidth Markets," with Lee McKnight, Communications & Strategies, Number 32, 4th Quarter 1998, 91-106.

"Forces for Integration and Disintegration in the Internet," with Petros Kavassalis, Communications and Strategies, Number 30, 2nd Quarter 1998, 135-154.

“Computer Use and Productivity Growth in Federal Government Agencies, 1987-92”, with Frank Lichtenberg, Journal of Industrial Economics, Volume XLVI, Number 2, June 1998, 257-279.

“Understanding Vertical Integration in the Internet,” mimeo, paper presented to Euro CPR '98 Conference, Venice, April 1998.

“Improving Local Exchange Competition: Regulatory Crossroads,” with R. Glenn Hubbard, mimeo, Columbia University, February 1998.

"Information Technology and Its Impact on Productivity: Firm-level Evidence from Government and Private Data Sources, 1977-1993," with Frank Lichtenberg, Canadian Journal of Economics, volume 32, No. 2, April 1999, pages 335-362.

"The Political Economy of Congestion Charges and Settlements in Packet Networks," with Martin Weiss, Telecommunications Policy, 20(3), April 1996, pages 219-31.

"Compatibility Standards and Industry Competition: Two Case Studies", Economics of Innovation and New Technology, 4(2), 1996, pages 97-112.

"Compatibility Standards and Interoperability: Lessons from the Internet", in Standards Policy for Information Infrastructure, edited by B. Kahin and J. Abbate, Harvard Information Infrastructure Project, Cambridge MA: MIT Press, 1995.

Quality and Reliability of Telecommunication Infrastructure (editor), Hillsdale, NJ: Lawrence Erlbaum Associates, 1995.

"The Quality of Complex Systems and Industry Structure", with Nicholas Economides, in Quality and Reliability of Telecommunication Infrastructure, edited by William Lehr, Hillsdale, NJ: Lawrence Erlbaum Associates, 1995.

“Repeated Contract Negotiations with Private Information: Comment,” Japan and the World Economy, 7(4), November 1995, pages 473-74.

"Quality Choices in a Network of Networks", in *Private Networks and Public Objectives*, edited by E. Noam and A. NíShúilleabháin, North Holland: New York, 1996.

"ISDN in the U.S.A.: Is it Arriving at Last?", in *ISDN: An International Comparison of Trends in the USA, Japan, Singapore and Europe*, Final Report to the ISDN Commission of North Rhine-Westphalia, May 1996.

"Compatibility Standards and the Internet", working paper, September 1992.

"Standardization: Understanding the Process", Journal of the American Society for Information Science, vol 43, no 8 (September 1992) 550-555.

"Voluntary Standard Setting, Institutions and the Allocation of Technical Capabilities", working paper, July 1992.

"ISDN and the Small User: Regulatory Policy Issues", with Roger Noll, in Integrated Broadband Networks: the Public Policy Issues, edited by Martin Elton, North-Holland, New York, 1991, 147-178.

"Incremental Costs and the Efficient Pricing of Local Exchange Services: A Synopsis of the Incremental Cost Conference", Center for Economic Policy Research Working Paper #175, Stanford University, January 1990.

"Vertical Integration in the Cable Television Industry: the Issue of Content/Carrier Separation", WD-5100-MF, RAND Corporation, Santa Monica, CA, August 1990.

"ISDN: an Economists' Primer to a New Telecommunications Technology", working paper, February 1989.

"Economics of Anticipatory Standard Setting", working draft, presented at the European Association of Research in Industrial Economics (E.A.R.I.E.) Conference, Chania, Crete, September 1994.

"Political Economics of Voluntary Standard Setting", working draft, January 1992.