

Curriculum Vitae
Shane Mitchell Greenstein
Elinor and Wendell Hobbs Professor
Management and Strategy
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Education

- *June 1989*, Ph.D. Stanford University, Department of Economics.
- *June 1983*, B.A. University of California at Berkeley, Department of Economics.

Professional Positions at Universities

- *2001 - present*, Elinor and Wendell Hobbs Professor of Management and Strategy;
- *2002-2005*, Department Chair, Management and Strategy, Kellogg School of Management, Northwestern University.
- *1997 - 2001*, Associate Professor, Department of Management and Strategy, Kellogg School of Management, Northwestern University.
- *1996 - 1997*, Associate Professor, Department of Economics & Institute of Government and Public Affairs, University of Illinois
- *1989 - 1996*, Assistant Professor, Department of Economics, University of Illinois at Urbana/Champaign.

Temporary Academic Appointments

- *June, 1994 - July 1995*, Visiting Scholar, Computer Industry Project, Center for Economic Policy Research, Stanford University, and Research Associate, Institute for Management, Innovation, and Organizations, Haas School of Business, University of California, Berkeley.
- *Fall Quarter, 1989*, Acting Assistant Professor of Economics, Stanford University
- *June - December, 1989*, Post-doctoral researcher, CEPR, Stanford University.

Membership in Academic Organizations

- American Economics Association

- Econometric Society
- International Industrial Organization Society
- Institute of Electrical and Electronic Engineers

Positions in Academic Organizations

- *2005-present*, Research Associate, Conference on Research in Income and Wealth.
- *2000- present*, Affiliate, Center for the Study of Industrial Organization, Northwestern University.
- *1997- present*, Research Associate, National Bureau of Economic Research, Productivity group and Industrial Organization Group
- *1991- 96*, Faculty Research Fellow, National Bureau of Economic Research, Productivity group.
- *1999- present*, Research Associate, Institute for Policy Research, Northwestern University.
- *1995 - 97*, Affiliate, Institute for Government and Policy Affairs, University of Illinois.

Board Service/Conference Organizations

- *2000 - present*, Editorial board, Journal of Regulatory Economics
- *2004 – present*, Editorial board, Information and Economic Policy.
- *2005 – present*, Editorial Board, Economics Bulletin.
- *2000 - present*, US Census Advisory Committee.
- *1995 - present*, Columnist and Board member, *IEEE Micro*
- *2004*, Co-organizer, (with Victor Stango), Standards and Public Policy, Chicago Federal Reserve.
- *2003*, Review Board, 5th International Conference on Electronic Commerce
- *2004, 2003, 2002, 2001*, Student paper Committee, TPRC presents the Conference on "Communications, Internet and Policy."
- *2003*, Coordinator, NBER Productivity Workshop, Computers and Telecommunications.
- *2000 -02*, Advisory Panel, Advanced Technology Program, National Institute of Standards and Technology, Department of Commerce.
- *2005, 2003, 2002, 2001, 2000, 1999* NSF, Review Panel.
- *December 2000*, Coordinator, Illinois Telecommunications Symposium, Kellogg Graduate School of Management, Northwestern Universtiy.
- *1989-00*, Program Committee & Chair (in 2000), TPRC presents the 28th Annual Conference on "Communications, Internet and Policy."
- *2000*, Coordinator, CCC Doctorol Student Consortia.
- *Summer 1999*,Coordinator, Computer Day, NBER Summer Institute, Productivity Workshop.
- *December, 1997*, Coordinator (with Scott Stern), NBER, University Research Consortium, Competition and Organization in Technology-Intensive Industries, Cambridge, MA.
- *April, 1997*, Coordinator, IGPA Regulatory Roundtable, Competition in Telecommunications and the Deregulation Bill: History, Expectations and Impact in

Illinois, Union League Club, Chicago, IL.

Consulting Experience

- *Fall, 2002*, Bureau of Economic Analysis, Department of Commerce, Assessing the Price Index for Internet Access.
- *Winter-Spring, 1998*, Consultant for Lexecon Inc., Chicago IL., Mergers in the Internet.
- *Winter-Spring, 1997*, OECD, Paris, France, The Economic Contribution of Information Technology.
- *November, 1993-95*, Consultant for Law and Economics Consulting Group, Emeryville, CA., Various topics in telecommunications infrastructure.

Awards and Honors

- 2004, Keynote speaker at the ZEW Conference on the Economics of Information and Communication Technologies, Mannheim, Germany.
- 2003, “Best Management Paper” at the International Conference on Electronic Commerce, Pittsburgh.
- 2000, 2003, IEEE Golden Core Member
- 1999, IEEE Computer Society Meritorious Service Award
- 2003, 2000, 1999, Designated among Best Papers at Telecommunications Policy Research Conference (i.e., Top 15).
- 1991- 97, Incomplete list of Excellent Instructors, eleven times, University of Illinois.
- 1991-92, Ameritech Research Fellow, Institute for Government and Policy Analysis, University of Illinois.
- 1991-present, Who’s Who in Business and Finance.
- August 1990, Young Economists Essay Competition Award (and Garey Ramey), the European Association for Research in Industrial Economics.
- 1989, Charles Babbage Institute Dissertation Fellow.
- 1983, Phi Beta Kappa.
- 1983, High Distinction in General Scholarship, UC Berkeley.
- 1983, Departmental Honors, Department of Economics, UC Berkeley.
- 1982-83, Omicron Delta Epsilon.
- 1979-1983, California Alumni Scholar.

Publications

Articles in Refereed Journals

1. 2006 (and Angelique Augereau and Marc Rysman), “Coordination versus Differentiation in a Standards War: 56K modems.” *Rand Journal of Economics*.
2. 2006 (and Mike Mazzeo), “Differentiated Entry into Competitive Telephony,” *Journal of Industrial Economics*.

3. 2005 (and Avi Goldfarb and Chris Forman) "How did Location Affect adoption of the Internet by Commercial Establishments? Urban density versus Global Village." *Journal of Urban Economics*. Pp. 389-420.
4. 2005 (and Avi Goldfarb and Chris Forman) "How do Industry Features Influence the Role of Location on Internet Adoption?" *Journal of the Association of Information Systems*.
5. 2004 (and Marc Rysman), "Testing for Agglomeration and Dispersion," *Economics Letters*.
6. 2004 (Chris Forman and Avi Goldfarb), "Geographic Location and the Diffusion of Internet Technology," *Electronic Commerce Research Applications*, 4(1), pp 1-13.
7. 2002 (and Cory Capps, David Dranove, Mark Satterthwaite), "Antitrust Policy and Hospital Mergers: Recommendation for a New Approach," *Antitrust Law Bulletin*. Winter. Pp. 677-714.
8. 2002, (and Tom Downes), "Entry into the Schooling Market: How is the Behavior of Private Suppliers Influenced by Public Sector Decisions?" *Bulletin of Economic Research*, 54 (4) October, pp 373-392.
9. 2002 (and Tom Downes), Universal Access and Local Commercial Internet Markets, *Research Policy*, 31, pp 1035-1052.
10. Winter 2001, "Technological Mediation and Commercial Development in the Early Internet Access Market," *California Management Review*, 43, 2, pp 75-94.
11. 2001 (and Angeliqye Augereau), " The Need for Speed in Emerging Communications Markets: Upgrades to Advanced Technology at Internet Service Providers." *International Journal of Industrial Organization*, v 19, pp 1085-1102.
12. 2001 (and Tim Bresnahan), "The economic contribution of information technology: Towards comparative and user studies," *Journal of Evolutionary Economics*, v11, pp 95-118.
13. December, 2000, "Building and Developing the Virtual World: The Commercial Internet Access Market." *Journal of Industrial Economics*, December.
14. Winter, 2000, "The Commercialization of Information Infrastructure as Technology Mediation: The Internet Access Market." *Information System Frontiers*, 1:4, pp 329-348.
15. Winter, 2000 (and Ken Brown), "Identifying the Demand for Features: An application to Mainframe Computers," *Economics of Innovation and New Technology*, Vol 9, pp 353-

383.

16. *December, 1999* (and Tim Bresnahan), "Technological Competition and the Structure of the Computing Industry," *Journal of Industrial Economics*.
17. *December, 1999* (and Neil Gandal and Dave Salant), "Adoptions and Orphans in the Early Microcomputer Market: Chickens and Eggs, Hardware and Software," *Journal of Industrial Economics*.
18. *Winter, 1998* (and Jim Wade), "The Product Life Cycle in the Commercial Mainframe Computer Market, 1968-1983," *Rand Journal of Economics*.
19. *Winter, 1998* (and Ed Jimenez) "The Emerging Internet Retailing Market as a Nested Diffusion Process," *International Journal of Innovation Management*, V2, N3. pp 281-308.
20. *May, 1998* (and Garey Ramey), "Market Structure, Innovation, and Vertical Product Differentiation," *International Journal of Industrial Organization*, Vol 16 (3), Pp. 285-311.
21. *May, 1998*, "Industrial Economics and Strategy: Computing Platforms," *IEEE Micro: Chips, Systems, and Applications*, Special issue on Standardization, 18 (3), Pp. 43-53.
22. *Winter, 1997* "Lock-in and the Costs of Switching Mainframe Computer Vendors: What Do Buyers See?" *Industrial and Corporate Change*, 6(2), pp 247-273.
23. *January, 1996* (and Tim Bresnahan), "Technical Progress and Co-Invention in Computing and in the Use of Computers." *Brookings Papers on Economics Activity: Microeconomics*, Pp. 1-78.
24. *Summer 1996*, (and Tom Downes), "Understanding the Supply Decisions of Non-Profits: Modeling the Location of Private Schools," *Rand Journal of Economics*. 27 (2), pp 365-390.
25. *December 1995* (and Pablo Spiller), "Modern Telecommunications Infrastructure and Economic Activity: An Empirical Investigation." *Industrial and Corporate Change*, 4(4), pp. 647-665.
26. *November 1995*, (and Eduardo Luzio), "Measuring the Performance of a Protected Infant Industry: The Case of Brazilian Micro-Computers." *Review of Economics and Statistics*, pp 622-633.
27. *June, 1995*, "Sole-Sourcing versus Competitive Bidding: U.S. Government Agencies' Procedural Choices for Mainframe Computer Procurement." *Journal of Industrial*

Economics, XLIII (2), pp. 125-140.

28. *Summer, 1995*, (and Susan McMaster and Pablo Spiller), "The Effect of Incentive Regulation on Local Exchange Companies' Deployment of Digital Infrastructure," *Journal of Economics, Management, and Strategy*. 4 (2), pp 187-236. Also reprinted with data appendices as Center for Economic Policy Research, Publication No. 411, Stanford University.
29. *Winter, 1995*, "Lock-in and the Costs of Switching Mainframe Computer Vendors in the US Federal Government in the 1970s" *IEEE Annals of the History of Computing*, 17(3), pp 58-66.
30. *December, 1993*, "Markets, Standardization, and the Information Infrastructure," *IEEE Micro, Chips, Systems, and Applications*, Special Issue on Standards, 13 (6), pp. 36-51.
31. *Spring, 1993*, "Did Installed Base Give an Incumbent any (Measurable) Advantages in Federal Computer Procurement?" *Rand Journal of Economics*, 24(1), pp. 19-39.
32. *April, 1993*, "Procedural Rules and Procurement Regulations: Complexity Creates Trade-offs," *Journal of Law, Economics, and Organizations*., pp 159-180.
33. *September, 1992*, "Invisible Hands and Visible Advisors: An Economic Evaluation of Network Standardization," *Journal of the American Society for Information Science*, 43 (8), pp 538-549.
34. *Fall 1991*, "The Tape Story Tapestry: Historical Research in the age of Digital Technology," *IEEE Annals of the History of Computing*, 13(3): pp 27-38
35. *Fall, 1990*, "Creating Economic Advantage by Setting Compatibility Standards: Can Physical Tie-ins Extend Monopoly Power?" *Economics of Innovation and New Technology*, Vol. 1., pp 63-84.
36. *Fall, 1990*, (and Paul David), "The Economics of Compatibility of Standards: A Survey." *Economics of Innovation and New Technology*, Vol. 1., pp 3-41.
37. *Fall, 1990*, (and Luis Cabral), "Switching Costs and Bidding Parity in Government Procurement of Computer Systems." *Journal of Law, Economics, and Organizations*, 6(2), pp 453-469.

Books

1. 2006 (Editor), *The Industrial Economics of Computing*. Edward-Elgar Press, UK.
2. 2006 (and Victor Stango, Editors), *Standards and Public Policy*, Cambridge Press.

3. 2004, *Diamonds are Forever, Computers are Not, Economic and Strategic Management in Computing Markets*, Imperial College Press: London.
4. 2002, (and Lorrie Cranor, Editors), *Communications Policy and Information Technology: Promises, Problems, Prospects*, MIT Press.
5. 2001, (and Ben Compaine, Editors), *Communications Policy in Transition: The Internet and Beyond*, MIT Press.

Chapters in Books

1. *Forthcoming*, "Computing", in (eds, David Genesove et al), *The New Palgrave Dictionary of Economics*.
2. 2006 (and Jeff Prince), "The Diffusion of the Internet and the Geography of the Digital Divide," in (Eds. Robin Mansell, Danny Quah, and Roger Silverstone), *Oxford Handbook on ICTs*, Oxford University Press.
3. *Forthcoming*, (And Greg Stranger), "Pricing at the On-ramp to the Internet: Price Indices for ISPs during the 1990s." (Eds., Ernst Berndt and Charles Hulten) *Hard to Measure Goods and Service: Essays in Memory of Zvi Griliches*, University of Chicago Press.
4. 2006, (and Victor Stango) "The Economics and Strategy of Standards and Standardization," for (ed) Scott Shane, *Handbook of Business Strategy*.
5. 2006 (and Mark Rysman), "Coordination Costs and Standard Setting: Lessons from 56K" in (eds, Shane Greenstein and Victor Stango), *Standards and Public Policy*, Cambridge Press.
6. 2005, "The Economic Geography of Internet Infrastructure in the United States," in (eds) Martin Cave, Sumit Majumdar, and Ingo Vogelsang, *Handbook of Telecommunication Economics, Volume II*. Elsevier.
7. 2004, "Technological Mediation as Strategy: The Case of ISPs," in (ed) Subir Chowdhury, *Next Generation Business Handbook*, John Wiley and Sons, pp. 1128-1156..
8. 2004, (and Jeff Prince), "The Geographical Diffusion of the Internet in the United States," in (eds) Munindar Singh, *The Practical Handbook of Internet Computing*. CRC Press, pp 56-1 – 56-17.
9. 2003, (and Chris Forman and Avi Goldfarb), "Which Industries use the Internet?" in (ed) Michael Baye, *Organizing the New Industrial Economy*, Elsevier. Pages 47-72.
10. 2003 (and Mercedes Lizardo and Pablo Spiller), "The Evolution of Advanced Large

Scale Information Infrastructure in the United States,” in (ed) Allan Shampine, *Down to the Wire: Studies in the Diffusion and Regulation of Telecommunications Technologies*, Nova Science Publishers, New York. Pp. 3-36.

11. 2003 (and Chris Forman and Avi Goldfarb), “The Geographic Dispersion of Commercial Internet Use.” In *Rethinking Rights and Regulations: Institutional Responses to New Communication Technologies*, ed. Steve Wildman and Lorrie Cranor, Cambridge: MIT Press., pp. 113-45.
12. 2001, (and Timothy Bresnahan), "The Economic Contribution of Information Technology: Towards Comparative and User Studies," in (ed) Ulrich Witt, *Escaping Satiation, The Demand Side of Economic Growth*, Springer-Verlag, New York.
13. 2001, "The Commercialization of Internet Access: Lessons from Recent Experience", in (eds) Maryann Feldman and Al Link, *Technology Policy for the Knowledge-based Economy*. Kluwer Press.
14. 2001, "Commercialization of the Internet: The Interaction of Public Policy and Private Actions," in (eds) Adam Jaffe, Josh Lerner and Scott Stern, *Innovation, Policy and the Economy*, MIT Press.
15. 2000, "Empirical Evidence on Commercial Internet Access Providers' Propensity to Offer new Services," (ed) Benjamin Compaig and Ingo Vogelsang. *The Internet Upheaval, Raising Questions and Seeking Answers in Communications Policy*. MIT Press. Pp 253-276. 2000, "Framing Empirical Research on the Evolving Structure of Commercial Internet Markets, " in Erik Brynolfsson and Brian Kahin, *Understanding the Digital Economy: Data, Tools and Research*, MIT Press. {Also reprinted in (ed) Mirza Fehimovic, **Strategic Analyses, Case Studies, Security and Legal Issues, Implementation & Technology Analysis**. World Markets Research Center: London., Translated into Korean and posted at <http://seriecon.seri21.org/> Samsung Economic Research Institute. }
16. 1999 "Industrial Convergence," in (Ed) Richard Dorf, *The Technology Management Handbook*, CRC Press.
17. 1999 (and Tom Downes), "Do Commercial ISPs Provide Universal Access?" in (Ed) Sharon Gillett and Ingo Vogelsang, , *Competition, Regulation and Convergence: Current Trends in Telecommunications Policy Research*, Lawrence Erlbaum Associates, pp. 195-212.
18. 1999, “Vertical Foreclosure in Information Technology Markets: Comment on Ordover and Willig,” in (ed) Jeffrey A Eisenach and Thomas M Lenard, *Competition, Convergence and the Microsoft Monopoly: Antitrust in the Digital Marketplace*, Kluwer Academic Publishers, Boston.

Deleted:

19. 1999 (and Mercedes Lizardo), "Determinants of the Regional Distribution of Information Technology Infrastructure in U.S.," in (Eds) Dale Orr and Tom Wilson, *The Electronic Village: Public Policy Issues of the Information Economy*. C.D. Howe Institute, Toronto, Canada.
20. 1997, "From Super-minis to Super Computers: Estimating Surplus in the Computing Market." in (Eds) Tim Bresnahan and Robert J. Gordon, *The Economics of New Goods*, Pp. 329-362, University of Chicago Press.
21. 1997 (and Tarun Khanna), "What Does it Mean for Industries to Converge?" in (Ed) David Yoffie, *Competing in an Age of Digital Convergence.*, Pp. 201-226, Harvard University Press: Cambridge, MA.
22. 1996, "Invisible Hands versus Invisible Advisors: Coordination Mechanisms in Economic Networks," in (Ed) Eli Noam and Aine Nishuilleabhain, *Public Networks, Public Objectives*, Pp. 135-160, Elsevier Science B. V., Amsterdam, Netherlands.
23. 1996 (and Tim Bresnahan), "The Competitive Crash in Large Scale Commercial Computing." in (Eds) Ralph Landau, Timothy Taylor, and Gavin Wright *The Mosaic of Economic Growth*, Pp. 357-397, Stanford University Press: Stanford, CA.

Non-Refereed Publications

1. December, 2005, "Wireless and Electrical Markets: Becoming Similar?" *IEEE Chips, Systems, and Applications*, 25 (6).
2. October, 2005, "Outsourcing and two Strategies for Climbing the Value Chain," *IEEE Chips, Systems, and Applications*, 25 (5).
3. August, 2005, "The Explorer and the Expander, Both Early and Late," *IEEE Chips, Systems, and Applications*, 25 (4).
4. June, 2005, "Anatomy of a Foresight Trap," *IEEE Chips, Systems, and Applications*, 25 (3).
5. April, 2005, "Communications Consolidation After an Era of Constraints," *IEEE Chips, Systems, and Applications*, 25 (2).
6. February, 2005, "Not a Mellifluous March to Maturity," *IEEE Chips, Systems, and Applications*, 25 (1).
7. December, 2004, "Canaries, Whips and Sails," *IEEE Chips, Systems, and Applications*, 24 (6).

8. October, 2004, "Creative Destruction and Deconstruction." *IEEE Chips, Systems, and Applications*, 24 (5).
9. August, 2004, "The Diamond-Wafer Paradox, a Modern Mystery." *IEEE Chips, Systems, and Applications*, 24 (4).
10. June, 2004, "Imitation Happens," *IEEE Micro: Chips, Systems, and Applications*, 24 (3).
11. April, 2004, "The Paradox of Commodities," *IEEE Micro: Chips, Systems, and Applications*, 24 (2).
12. February, 2004, "Why Inventors are not Famous," *IEEE Micro: Chips, Systems, and Applications*, 24 (1).
13. October, 2003, "Jumping on Bandwagons," *IEEE Micro: Chips, Systems, and Applications*, 23 (5).
14. August, 2003, "Moore Meets Malthus in Multiples." *IEEE Micro: Chips, Systems, and Applications*, 23 (4).
15. June, 2003, "An Era of Error," *IEEE Micro: Chips, Systems, and Applications*, 23 (3).
16. April, 2003, "Too much Backbone?" *IEEE Micro: Chips, Systems, and Applications*, 23 (2).
17. February, 2003, "Where did the Internet go?" *IEEE Micro: Chips, Systems, and Applications*, 23 (1).
18. December, 2002, "Which Industries use the Internet?" *IEEE Micro: Chips, Systems, and Applications*, 22 (6).
19. October, 2002, "The Price is not Right." *IEEE Micro: Chips, Systems, and Applications*, 22 (5).
20. August, 2002, "The Crash in Competitive Telephony," *IEEE Micro: Chips, Systems, and Applications*, 22 (4).
21. June, 2002, "Markets for Technology," *IEEE Micro: Chips, Systems, and Applications*, 22 (3).
22. April, 2002, "Competition Policy for Innovative Industries," *IEEE Micro: Chips, Systems, and Applications*, 22 (2).
23. February, 2002, "The Ride Before the Fall," *IEEE Micro: Chips, Systems, and Applications*, 22 (1).

- Applications*, 22 (1).
24. December, 2001, "E-Business Infrastructure" *IEEE Micro: Chips, Systems, and Applications*, 21 (6).
 25. October, 2001, "Explaining Booms, Busts and Errors" *IEEE Micro: Chips, Systems, and Applications*, 21 (5).
 26. August, 2001, "An Earful about Zvi's Email," *IEEE Micro: Chips, Systems, and Applications*, 21 (4).
 27. June, 2001, "Shortfalls, Downturns and Recessions," *IEEE Micro: Chips, Systems, and Applications*, 21 (3).
 28. April, 2001, "Pricing Internet Access," Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 21 (2).
 29. February, 2001, "Measure for measure in the new Economy," Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 21 (1).
 30. December, 2000, "By the Numbers: Musings about numerical challenges in the information age," *iMP, The Magazine on Information Impacts*, the Center for Information Strategy and Policy (CISP) of Science Applications International Corporation (SAIC).
 31. December, 2000, "Flashpoints in the new Economy," Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 20 (6).
 32. Fall, 2000, "Computers and the Internet," NBER reporter, pp 15 - 17.
 33. October, 2000, "Falling Through the Cracks at Microsoft," Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 20 (5).
 34. August, 2000, "Hung up on AT&T," Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 20 (4).
 35. June, 2000, "An Era of Impatience," Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 20 (3).
 36. April, 2000, "A Revolution? How do you know?" Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 20 (2).
 37. February, 2000, "Aggressive Business Tactics: Are There Limits?," Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 20 (1).

38. *February, 2000, "Death of a Sophomore." California Monthly, Recalling Cal Section.*
39. *December, 1999, "On the Net: The Recent Commercialization of Access Infrastructure," iMP, The Magazine on Information Impacts, the Center for Information Strategy and Policy (CISP) of Science Applications International Corporation (SAIC).*
40. *December, 1999, "Virulent Word of Mouse," Micro-Economics Department, IEEE Micro: Chips, Systems, and Applications, 19 (6).*
41. *October, 1999, "Banking on the Internet," Micro-Economics Department, IEEE Micro: Chips, Systems, and Applications, 19 (5).*
42. *August, 1999, "Building the Virtual World," Micro-Economics Department, IEEE Micro: Chips, Systems, and Applications, 19 (4).*
43. *June, 1999, "Forecasting Commercial Change," Micro-Economics Department, IEEE Micro: Chips, Systems, and Applications, 19 (3).*
44. *April, 1999, "Bill, Act like a Mensch!," Micro-Economics Department, IEEE Micro: Chips, Systems, and Applications, 19 (2).*
45. *February, 1999, "When Technologies Converge," Micro-Economics Department, IEEE Micro: Chips, Systems, and Applications, 19 (1), pp 8-9.*
46. *December, 1998, "Commercializing the Internet," Micro-Economics Department, IEEE Micro: Chips, Systems, and Applications, 18 (6), pp 6-7.*
47. *October, 1998, "Return of the Jaded," Micro-Economics Department, IEEE Micro: Chips, Systems, and Applications, 18 (5), pp 4-5, 83.*
48. *August, 1998, "Uncertainty, Prediction and the Unexpected," Micro-Economics Department, IEEE Micro: Chips, Systems, and Applications, 18 (4), pp76-77*
49. *April, 1998, "The Ties That Bind: Foreseeing Foreclosure," Micro-Economics Department, IEEE Micro: Chips, Systems, and Applications, 18 (2), pp 4-5, 83-84.*
50. *February, 1998, "To have and to have not," Micro-Economics Department, IEEE Micro: Chips, Systems, and Applications, 18 (1), pp 76-77.*
51. *December, 1997, "The Software Industry Through an Academic Looking Glass," Micro-Economics Department, IEEE Micro: Chips, Systems, and Applications, 17 (6).*
52. *October, 1997, "Considering Opinions about Convergence," Micro-Economics Department, IEEE Micro: Chips, Systems, and Applications, 17 (5).*

53. August, 1997, "The Biology of Technology," Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 17 (4).
54. June, 1997, "Moping about Monopoly," Policy Forum, Institute for Government and Public Affairs, pp 1-4.
55. June, 1997, "Let's Play Monopoly," Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 17 (3), pp. 73-74
56. April, 1997, "It has bugs, but the games are out of this world," Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 17 (2), pp 5-6.
57. February, 1997, "How coinvention Shapes our Market," Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 17 (1), pp2-3.
58. December, 1996, "Don't Call it a Highway," Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 16 (6), pp. 78-9.
59. October, 1996, "Repetitive Stress Injuries," Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 16 (5), pp. 72-73.
60. August, 1996, "Debunking the Productivity Paradox." Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 16 (4), pp3-4.
61. June, 1996, "Up-grading, Catching-Up and Shooting for Par." Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 16 (3), pp 2, 79.
62. April 12, 1996, Letter to the Editor, Paul Attewell's The Productivity Paradox, *Chronicle of Higher Education*, page B6.
63. April, 1996, "A Birthday Even a Curmudgeon Could Love," Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 16 (2), pp 3-4.
64. February, 1996, "The Salad Days of On-line Shopping." Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 16 (1), pp 68-69.
65. December, 1995, "Not a Young and Restless Market" Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 15 (6), pp 3-4.
66. October, 1995, "Client-Server Demand and Legacy Systems." Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 15 (5), pp 4-5.
67. August, 1995, "Diamonds are Forever, Computers are not." Micro-Economics Department,

IEEE Micro: Chips, Systems, and Applications 15(4), pp 4-5.

68. June, 1995, "The Market and Computer Technology," Micro-Economics Department, *IEEE Micro: Chips, Systems, and Applications*, 15 (3), pp 8-9.
69. Fall, 1990, (and Bruce Bruemmer), "The Tape Story Tapestry: Historical Research in the age of Digital Technology," *Midwestern Archivist*, XV(2), pp 77 - 90.

Published Proceedings, monographs and reports

1. September 2004, (And Chris Forman and Avi Goldfarb) "City or Country: Where do Businesses use the Internet?" Federal Reserve Bank of San Francisco Newsletter. Number 2004-24. <http://www.frbsf.org/publications/economics/letter/2004/el2004-24.pdf>
2. April, 2003, (And Cory Capps, David Dranove, and Mark Satterthwaite), "Geographic Market Definition in Hospital Merger Cases" Testimony for the Federal Trade Commission and Department of Justice Hearings on Health Care and Competition Law and Policy. See www.ftc.gov.
3. December, 2002, "Is the Price Right? The CPI for Internet Access." A Report for the Bureau of Economic Analysis, Department of Commerce, Washington D.C.
4. February, 2002, "Market Structure and Innovation: A Brief Synopsis of Recent Thinking," Testimony for the Federal Trade Commission, Hearings on *Competition and Intellectual Property Law in the Knowledge-Based Economy*, Washington D.C. See www.ftc.gov.
5. June, 1998 (and Tim Bresnahan), "The Economic Contribution of Information Technology: Value Indicators in International Perspective." Organization for Economic and Cooperative Development. Paris, France.
6. March, 1997, "Understanding Industry Structure in Computing," *OECD Workshop on the Economics of the Information Society*, Workshop No. 6, Sponsored by OECD, Science Policy Research Unit, University of Sussex, and Institute of Electrical Engineers.
7. December 1994, "Investment and Average Practice Technology in the Information Infrastructure," Proceedings of Information Infrastructure Forum, *The Economics of Information Infrastructure*, at Washington D.C., July 21, 1994, Published by Kennedy School of Government, Center for Science & International Affairs, Harvard University.
8. June 1993, "Going by the Book: The Costs and Benefits of Procedural Rules in Federal Computer Procurement." Proceedings of *Demand, Public Markets, and Innovation*, at the University of Montreal, May, 1991, in *Science and Public Policy*, 20(3), pp. 157-172.

Book Reviews

1. June, 2005 "Innovation and Growth: Selected Economic Papers" by Jean-Phillipe Touffut, *Journal of Economics Literature*. XLII, pp 527-29.
2. 2004, "Technology and the New Economy," by Chong-en bai and Chi-wa Yuen, *Journal of Economic Literature*.
3. 2003, "Bandwagon Effects in High Technology Industries," by Jeffrey H. Rohlfs, *Journal of Media Economics*, 17(3), 229-232.
4. October, 2002, "Markets for Technology: The Economics of Innovation and new Technology," by Ashish Arora, Andrea Fosfuri, and Alfonso Gambardella, *Academy of Management Review*.
5. February, 1999, "Talk is Cheap, By Robert W Crandall and Leonard Waverman," The Brookings Institute, *Telecommunications Policy*.
6. December 1997, "The International Computer Software Industry, A Comparative Study of Industry Evolution and Structure." Edited by David C. Mowery," Oxford University Press, New York. *Journal of Economic Literature*.
7. March 1995, "Price Measurements and Their Uses, Edited by Murray F. Foss, Marilyn E. Manser, and Allan H.," *Journal of Economic Literature*, Vol XXXIII, pp 214-16.
8. December, 1992, "Regulation: Economic Theory and History, By Jack High, Editor" *Journal of Economic History*, pp. 982-983.
9. December 1989, "Technical Change and Economic Theory, by Giovanni Dosi, Christopher Freeman, Richard Nelson, Gerald Silverberg and Luc Soete," *Journal of Economic Literature*, Vol. XXVII, 4, pp 1714 - 1716.
10. September 1989, "Competition: The Economics of Technical Change, by Paul Auerbach" *Journal of Economic History*, Vol XLIX, 3.
11. April 1988, "Targeting the Computer: Government Support and International Competition, by Kenneth Flamm," in *Annals of the History of Computing*, Vol 10,2.

Working papers submitted for publication and not yet accepted

1. (and Chris Forman and Avi Goldfarb), "Technology Adoption In and Out of Major Urban Areas: When Do Internal Firm Resources Matter Most?" NBER Working Paper.
2. (And Tom Downes), "Understanding Why Universal Service Obligations May Be Unnecessary: The Private Development of Local Internet Access Markets"

3. (And Greg Stranger), "Pricing in the Shadow of Firm Turnover: ISPs in the 1990s."
4. (and Cory Capps, David Dranove and Mark Satterthwaite) "The Elzinga-Horarty Criteria and the Silent Majority Fallacy: A Critique and an Approach to Hospital Mergers." Under revision.
5. (and Jim Wade and David Barth), "Empirical Determinants of Product Obsolescence and the Product Life Cycle: An Application to the Commercial Mainframe Computer Market," Under revision.

Working papers not submitted for publication and not otherwise accounted for

1. *Spring 2003*, (and Tim Bresnahan and Rebecca Henderson) "Organizational Adjustment Costs and the Evolution of Platform Industries."
2. *August 2002* (And Sarit Markovich), "Pricing for On-line Storage"
3. *August 2000*, "Contracting Terms for Dial-up Internet Access,"
4. *August 1999*, (and Tim Bresnahan and Harumi Ito), "The Sources and Effects of Investment Irreversibility: Large Scale Computing."
5. *September 1996* (and Pablo Spiller), "Estimating the Welfare Effects of Digital Infrastructure." NBER Working Paper # 5770.
6. *January, 1994*, "Did Computers Diffuse Quickly? Best versus Average Practice in Mainframe Computers, 1968-1983." Working Paper No. 4647, National Bureau of Economic Research, Cambridge, MA. February 1994.
7. *May 1989* (and Paul David), "Compatibility Standards and Information Technology -- Business Strategy, market Development and Public Policies: A Synopsis of Panelist's Statements and the Discussion at the CEPR Compatibility Standards Workshop.", Center for Economic Policy Research, Stanford University, Publication # 159. Committed to proposed Paul David book.

Recordings

- *1997*, Telecommunications Policy: The Changing Landscape. Policy Soundings Series, Institute for Government and Public Affairs. University of Illinois.

Research Grants

- *Spring, 2004*, Standards and Public Policy, Kellogg School of Management.
- *Summer 2002*, Data Purchase, IT Infrastructure Investment around the United States, GM Strategy Center and Kellogg School of Management.

- *Spring 2002*, Michael Mazzeo, Co-PI, Competitive Local Exchange Companies, Searle Foundation.
- *Spring 2000-2001*, "Measuring new Industries: Internet Service Providers," Bureau of Economic Analysis, Department of Commerce, and the National Science Foundation.
- *Spring 2000-2001*, Jim Schwoch, co-PI, "Information Technology Measures and Benchmarks: New Approaches for International Measurements and Public Policy." National Science Foundation.
- *Spring/Summer, 1999*, "Measuring the Service Sector: Commercial Internet Access," Brookings Institute.
- *Winter, 1999*, GM Strategy Center, Northwestern University, "Developing a Price Index for Internet Access."
- *Winter, 1999*, Advance Technology Program, National Institute for Science and Technology, "Questions about Spillover in the post-funding ATP Survey."
- *Summer, 1998*, Ameritech Grant to the Consortium for Research on Telecommunications Policy, Northwestern University, "The Organization of the Delivery of Internet Service in the US."
- *Spring, 1998*, Organization for Economic and Cooperative Development (joint with Tim Bresnahan), "The Economic Contribution of Information Technology: Value Indicators in International Perspective."
- *1997 - 98*, Council on Library Resources, "American on and off line: The Development of the Commercial Internet Service Provider Industry."
- *1996 - 97*, IGPA, University of Illinois, "The development of information infrastructure by private markets: The Distribution of Internet Service Provider Industry across the US."
- *Spring 1996*, IGPA, University of Illinois, "The Determinants of State Telecommunications Regulations."
- *Fall 1995 - 1997*, National Science Foundation (Joint with Pablo Spiller), "The Determination of Telecommunications Regulation and its Impact on Digital Infrastructure Deployment."
- *Fall 1995*, Bureau of Business and Economic Research, University of Illinois, "Telecommunications Infrastructure and Economic Welfare."
- *1995*, National Bureau of Economic Research, "An Empirical Study of the Demand for Large Scale Computing."
- *1994-1995*, University of Illinois Research Board Grant for "Modernization of the Telecommunications Infrastructure."
- *1992-1995*, National Science Foundation, Research Initiation Award, "Evaluating the Economics Benefits from Improvements in Computing Equipment," IRI-9209321.
- *1991-1992*, Institute of Government and Policy Analysis, "The Quantitative Determinants of the Computer Adoption and its Relationship to Economic Growth."
- *Fall 1991*, University of Illinois Research Board Grant for "Developing Data for an Economic History of the United States Computer Industry."

- *Fall 1990*, University of Illinois Research Board Grant for "Developing Data for an Economic History of the United States Computer Industry."
- *Fall 1989*, Center for Economic Policy Research, Stanford University, "A Market History of the Mainframe and Mini-Computer Industry in the United States."
- *1989*, National Science Foundation, Post-Doctoral Fellow in Applied Economics, at Center for Economic Policy Research, Stanford University.

Doctoral Dissertation Committees at the Northwestern University

<u>Name</u>	<u>Department</u>	<u>Year Complete</u>	<u>Duties</u>
Kristina Steffenson	M&S	----	Principal
John Laprise	Communications	----	Reading member
Allan Collar-Wexler	Economics	----	Reading member
Doug Frank	M&S	----	Reading member
Ambarish Chandra	Economics	----	Reading member
James Oldroyd	MORS	----	Reading member
Seongwuk Moon	M&S	----	Reading member
Greg Stranger	M&S	----	Principal
Winai Wongserat	M&S	2005	Principal
Eugene Orlov	Economics	2005	Reading member
Richard Hayes	MORS	2005	Reading member
James Snyder	Political Science	2004	Reading member
Jeff Prince	Economics	2004	Reading member
Urmi Mukherjea	M&S	2004	Reading member
Nick Kreisle	Economics	2004	Reading member
Mark Fusaro	Economics	2004	Reading member
Zsolt Mackaski	Economics	2004	Reading member
Mark Kennedy	MORS	2003	Reading member
Dave Barth	Economics	2003	Reading member
Chris Forman	M&S	2002	Principal
Avi Goldfarb	Economics	2002	Reading member
Toby Arquette	Communications	2002	Reading member
Craig Peters	Economics	2002	Reading member
Pedro Mendi	Economics	2001	Reading member
Stuart Gurrea	Economics	2001	Reading member
Oded Bizan	Economics	2001	Reading member
Karen Frazier	Communications	2001	Reading member
Hiroshi Ohashi	Economics	2000	Reading member
Matthew Clemens	M&S	2000	Reading member
Cory Capps	Economics	2000	Reading member
Amy Almeida	Economics	1999	Reading member
Angelique Augereau	M&S	1999	Principal
Jorge Tarzijan	M&S	1998	Reading member

Teaching Schedule at Northwestern University

<u>Course</u>	<u>Quarter</u>	<u>Sect</u>	<u>Enrollment</u>	<u>Learning[^]</u>	<u>Class[^]</u>	<u>Instructor[^]</u>
463	Fall05	61	26	8.3	8.5	8.6
485	Spring05	21	8@	9.4	9.6	9.6
463	Spring05	81	37	7.8	8.1	8.3
463	Fall04	61	25	7.7	7.6	7.8
485	Spring04	21	12@	8.5	8.9	9.1
463	Fall03	61	39	7.9	7.8	7.8

463	Fall03	71	30	8.1	8.2	8.5
485	Spring03	21	8@	9.5	9.8	10
463	Fall02	61	24	8.6	8.3	8.5
463	Fall02	71	10	8.5	8.4	8.8
485	Spring 02	21	8@	9.4	9.8.	9.1.
463	Fall01	61	36	8.0	7.8	8.0
	Fall01	71	36	7.8	7.8	7.7
	Winter00	61	60#	8.1	7.8	7.7
	Winter00	71	58#	8.2	7.8	7.6
	Fall00	61	69#	7.1	6.8	6.9
	Fall00	71	64#	7.7	7.5	7.7
	Winter99	61	70#	7.7	7.5	7.5
	Winter99	71	54#	8.0	8.0	7.8
	Fall99	61	65#	8.7	8.4	7.9
	Fall99	71	50	8.6	8.3	8.2
	Spring99	61	55#	7.9	7.8	7.5
	Spring99	71	34	7.9	8.1	8.2
	Winter99	61	36	8.5	8.4	8.3
	Winter99	71	16	9.8	9.7	9.6
	Spring 98	81	22	5.6*	5.4*	5.5*
	Winter 98	61	35	5.7*	5.8*	5.5*
	Winter 98	71	34	5.5*	5.4*	5.7*

^ Ratings on 10 point scale from 1999 and onwards.

* Ratings out of a 7 point scale.

Class capacity reached after bidding.

@PhD class enrollment includes auditors.

Supervision of Independent Research

Summer 2005, Lisa Sato, Deepa Moorthy, MBA.

Winter 2004 – Winter 2005, Yingshi Jin, Marketing Department PhD candidate.

Spring 2005, John Laprise, Communications Department PhD candidate.

Winter 2004, Daniel Baranowski, Patrick Youssi, MBA.

Winter, 2004, James Oldroyd, MORS Department.

Fall, Winter & Spring, 2004, Winai Wongersurat, M&S Department.

Winter - Spring 2002, Kurt Vonnahme, Undergraduate economics, Honors thesis.

Fall 2000, Zeev Klein, Undergraduate, Economics.

Spring 2000, Herb Munsterman, Biotech program, Alexandre Alvim, MBA,

Robert King, MBA, Toby Arquette, Communications, Greg Young, Biotech Program,

Winter 2000, Jaideep Vishnubhakat, Biotech Program, Pablo Prieto, Biotech Program,

Spring 1999, Luciana Cordova, Laura Farrelly, Ned Smith, MBA, James DeMarco, Chris Stengrim, MBA,

Winter 1999, Sharon Goldstein, Robert Seirens, Andy Pinkerton, Nathan, Swaminathan, MMM MBA,

Fall 1998, Eric Berg, MBA,

Spring 1998, Irirate, Kathleen, EMP,

Winter, 1998, Ned Rollhaus, Kellogg MBA,

Service to the Management and Strategy Department

2002-2005, Department Chair.

2000- 2002, Graduate Program co-coordinator for MEAS.

1998-99, Recruiting Committee, chair

1997-98, 99-00 Recruiting Committee

Service to the Kellogg Graduate School

2005-2006, Stanley Reiter Award committee.

2001- 2005, research Computing Committee
2001, 2002, Ad hoc curriculum review.
1999, 2000, 2001, 2005, Ad hoc personnel review committees.
1997-98, 2000-01 Information Technology Committee.

Service to the Northwestern University

2002, 2004, Outside Reviewer, Law School P&T ad hoc committee.
2000-05, Oversight board, IT program.
1999-00, Oversight Board, Biotechnology Program
1997-99, Intellectual Property Policy Committee
1999, 00, 01, 02, 03. Outside reviewer, Communications Department recruiting.

Service to Professional Community: Outside Review of Promotion and Tenure

Boston University, Brandies University, Carnegie-Mellon University, Columbia University, Duke University, Georgetown University, Georgia Technology University, Katholieke Universiteit Leuven, Massachusetts Institute of Technology, Purdue University, Queens College – Suny, San Jose State University, Stanford University, Syracuse University, Tel Aviv University, Tufts University, University of British Columbia, University of Calgary, University of California – Davis, University of Central Florida, University of Illinois – Urbana/Champaign, University of Michigan, University of Pennsylvania, University of Southern California, University of Wisconsin

Service to Professional Community: Requests to Referee

Academic Press, American Economics Review, B.E. Journal of Economic Analysis and Policy, Brookings Institute, Bulletin of Economic Research, California Management Review, Canadian Journal of Economics, Economics of Innovation and New Technology, Economic Inquiry, European Journal of Political Economy, European Journal of Standardization, Explorations in Economic History, Federal Trade Commission, Government Accounting Office, Harper-Collins Press, IEEE Annals of the History of Computing, IEEE Micro, Industrial and Corporate Change, International Journal of Industrial Organization, International Journal of Innovation and Management, Israel Science Foundation, Government Accounting Office, Journal of Behavior and Economics, Journal of Business, Journal of Econometrics, Journal of Economic Growth, Journal of Economic History, Journal of Economics and Management Strategy, Journal of Environmental Economics and Management, Journal of Evolutionary Economics, Journal of Industrial Economics, Journal of International Economics, Journal of Law and Economics, Journal of Law, Economics, and Organization, Journal of Political Economy, Journal of Public Economics, Management Science, Managerial and Decision Economics, MIT Press, National Research Council of the National Academy of Sciences, National Science Foundation, National Tax Journal, Quarterly Journal of Business and Economics, Quarterly Journal of Economics and Finance, Rand Journal of Economics, Regional Studies, Research Policy, Review of Economics and Statistics, Review of Economic Studies, Review of Income and Wealth, Review of Network Economics, Russell Sage Foundation, Sloan Foundation, Socio-Economic Planning Sciences, Social Science and Humanities Research Council of Canada, Southern Economic Journal, Stanford University Press, Strategic Management Journal, The Information Society, Telecommunications Policy, United States Israel Binational Science, Foundation, University of Illinois Research Board, World Scientific Publishing.

Selected Media Appearances and Interviews

Print media: ABA Journal, Agency France Press, Boston Globe, Chicago Tribune, Chicago Sun Times, Computer World, Consumer Electronics, Crane's Chicago Business, Denver Post Editor & Publishing Magazine, Dow Jones Magazine, Financial Times, Forbes, Freedom Forum On Line, International Herald Tribune, Los Angeles Times, New Orleans Times-Picayune, New York Review of Books, New York Times, PC World, Reuters, San Jose Mercury News, Time Magazine, USA Today, Wall Street Journal, World Business.

Internet Media: CNET News, Forbes ASAP, PC World, Radio for Change.com, Reuters, Tele.com, ZDNET news.

Radio appearances: CNET Radio news, NBC Radio news, WBEZ, Chicago, *Odyssey with Gretchen Helfrich*, WGN, Chicago, *Bob Collins Show*, *Spike O'Dell Show*, *Ext780*, with *Milton Rosenberg*, WDCB, Chicago, WBBM Radio news, Chicago, Wall Street Journal Radio, New York.

Local television appearances. In Chicago: CBS local news, Fox local news, CLTV local news, WGN *Nightly News*, WTTW *Chicago tonight*. In Urbana: WILL, Channel 12, Urbana, IL., *Talking Point*.

Selected Examples of Print Media Featuring Quotes and Research:

- Toronto Star, 1/15/06, "May the iForce be With you." By Sharda Prashad.
- Chicago Tribune, 12/14/05, "Vonage Joins Web Phone Fray: Wireless Wi-Fi with new Product," by Jon Van.
- Chicago Tribune, 6/30/05, "Web Service Price War Seen Despite Ruling," by Jon Van.
- Chicago Tribune, 3/2/05, "Qwest offers 15,000 job cut on MCI," by Jon Van.
- Chicago Tribune, 12/12/04, "Phones? SBC boss wants to get back into TV Picture." By Jon Van.
- Chicago Tribune, 5/20/04, "Motorola Takes Heat over 9/11," by Barbara Rose.
- Fast Company, March, 2004, "What We Learned in the New Economy," by Jennifer Reingold.
- Wall Street Journal, 2/13/04 "Big Name Mergers Won't Ease Crowding in Cellphone Industry," by Jesse Drucker page 1.
- Associated Press, 1/13/03, "Steve Case's Future Likely a Visible One," by Lisa Singhanian.
- Reuters, 11/02/02, "Microsoft seen Stronger Following Ruling." Internet release. Widely quoted in secondary sources on line.
- Los Angeles Time, 8/18/02, "Telecom Woes Shared via Industry Party Line." Business page.
- Chicago Tribune, 6/12/02, "The Fragile Nature of Trust," Editorial Page.
- Chicago Tribune, 12/09/01, "Steep drops and high hopes," by Janet Kidd Stewart.
- San Jose Mercury News 10/30/00, "Dialing up from a home where AOL doesn't roam" by David Plotnikoff.
- New Orleans Times-Picayune 10/30/00, "Broadband Battle: Cable companies, ISPs hit up Washington for rights to the Net's fiber-optic backbone," by John McQuaid.
- Chicago Tribune, 6/11/00, "Antitrust case loaded with textbook do's and don't's." by Frank James.
- PC World, April, 2000, "Attention Net Shoppers: Cyser-sales Taxes Loom."by Anush Yegyzarian
- Washington Post, 2/22/00, "Small Time Web Providers do Big Business,"by Ariana Cha.
- Chicago Tribune, 11/7/99, "Microsoft's Defeat Opens Window to Suit Settlement," by Andrew Zajac
- Financial Times of London, 9/21/99, "Ugly ducklings: Microsoft could split into 'Baby Bills' if it loses its antitrust trial." By Richard Wolffe
- Los Angeles Times, 9/6/99, "ISPs Face a Choice: Evolution or Extinction" by Karen Kaplan.
- CNET News, 4/12/99, "Digital Divide not so Deep"By Bloomberg News.
- Time Magazine, 3/22/99, "The Digital Divide," By Chris O'Malley.
- San Jose Mercury News, 9/14/97, "The Productivity Puzzle: Technology Seemingly Isn't Boosting Worker Output," By Scott Thurm.
- World Business, January/February, 1997, "What's up with Efficiency?" by Neal Singer
- New York Times, 2/24/97, "A Differing View of the Spread of Technology," by John Markoff
- Chicago Tribune, 2/17/97, "Countryside not Missing Computer Revolution after all," by Richard Orr.
- Fortune Magazine, 3/6/95, "What Slowed the PC Revolution?" by Rob Norton.