

Curriculum Vitae
Professor Shane Mitchell Greenstein
The Martin Marshall Professor of Business Administration
Harvard Business School
Jan, 2021

Department address: Technology Operation and Management
Morgan Hall 439
Harvard Business School
Harvard University
Boston, MA 02163

Contact Information: E-mail:sgreenstein@hbs.edu
Phone: 617-384-7472
Fax: 617-384-4072

Publications

Books and edited volumes

1. 2016, (and Josh Lerner and Scott Stern, editors) *Innovation, Policy and the Economy*, Volume 17, Special issue devoted to the economics of digitization. NBER conference volume, University of Chicago Press.
2. 2015, *How the Internet Became Commercial: Innovation, Privatization, and the Birth of a new Network*, Princeton University Press. <http://press.princeton.edu/titles/10574.html>. Winner of the 2016 Schumpeter Prize.
3. 2015, (and Avi Goldfarb and Catherine Tucker, Editors), *Economic Analysis of the Digital Economy*, NBER conference book, University of Chicago Press.
4. 2013, (and Avi Goldfarb and Catherine Tucker, Editors), *The Economics of Digitization*, Edward Elgar; Cheltenham, UK.
5. 2007 (and Victor Stango, Editors), *Standards and Public Policy*, Cambridge Press. Second edition (paperback), 2011.
6. 2006 (Editor), *Computing*. Edward-Elgar Press, UK.
7. 2004, *Diamonds are Forever, Computers are Not, Economic and Strategic Management in Computing Markets*, Imperial College Press: London.

8. 2002, (and Lorrie Cranor, Editors), *Communications Policy and Information Technology: Promises, Problems, Prospects*, MIT Press.
9. 2001, (and Ben Compaine, Editors), *Communications Policy in Transition: The Internet and Beyond*, MIT Press.

Articles in Refereed Journals

1. 2021. (Ran Zhuo, Bradley Huffaker, kc Claffy), The Impact of the General Data Protection Regulation on Internet Interconnection. *Telecommunication Policy*, (Also NBER Working paper 2648.)
2. 2021 (and Roberto Fontana), “Platform Leadership and Supply Chains: Intel, Centrino, and the Restructuring of Wi-Fi Supply.” *Journal of Economic Management Strategy*.
3. 2021, (and Yuan Gu and Feng Zhu), “Ideological Segregation Among Online Collaborators: Evidence From Wikipedians.” *Management Science*, (Also NBER Working paper 22744.)
4. 2020, “The Basic Economics of Internet Infrastructure,” *Journal of Economic Perspectives*. 34(2), pp. 192-214.
5. 2020, “Inconvenient Truths: Interpreting Origins of the Commercial Internet.” *Journal of Law and Innovation*. 3(1). 36-68.
6. 2020 (and Yasin Ozcan), Technological Leadership (de)Concentration: Causes in Information and Communication Technology Equipment. *Industrial and Corporate Change*. 29(2), April, 241-263,
7. 2019 (and Andre Boik and Jeff Prince), “The Persistence of Broadband User Behavior: Implications for Universal Service and Competition Policy.” *Telecommunications Policy*. 43 (8).
8. 2018, (and Feng Zhu), “Do Experts or Crowd-Based Models Produce More Bias? Evidence from Encyclopædia Britannica and Wikipedia,” *Management Information Systems Quarterly*. 42(3), 945-959.
9. 2017 (and Josh Lerner and Scott Stern), “Introduction to Volume 17.” *Innovation, Policy and the Economy*, Volume 17, NBER conference volume, University of Chicago Press.
10. 2017, (and Jeff Prince), “Measuring Consumer Preferences for Video Content Provision via Cord-Cutting Behavior,” *Journal of Economics and Management Strategy*. 26.2

Summer. Pp. 293-317.

11. 2016 (and Feng Zhu), "Open Content, Linus' Law, and Neutral Point of View," *Information Systems Research*, 27(3), pp. 618-635. <https://doi.org/10.1287/isre.2016.0643>
12. 2016, "Reference Wars: Encyclopedia Britannica's Decline and Encarta Emergence," *Strategic Management Journal*. V38(5), Pp. 995-1017.
13. 2016, (and Chris Forman and Avi Goldfarb), "Invention and Agglomeration in the Bay Area: Not just ICT." *American Economic Review, Papers and Proceedings*. May. 106 (5) Pp. 146-151.
14. 2016, (and Martin Peitz and Tomasso Valletti), "Net Neutrality: A Fastlane to Understanding the tradeoffs." *Journal of Economic Perspectives*. 30(2). Pp 127-150.
15. 2014, (and Jeff Prince), "Does Service Bundling Reduce Churn?" *Journal of Economics and Management Strategy*. 23(4), pp. 839-875.
16. 2014, (and David Dranove, Chris Forman, and Avi Goldfarb), "The Trillion Dollar Conundrum: Complementarities and Health Information Technology," *American Economic Journal, Economic Policy*, November, 6(4), pp. 239-270.
17. 2014, (and Tim Bresnahan), "Mobile Computing: The Next Platform Rivalry," *American Economic Review, Papers and Proceedings*, May. 104(5): 475-80.
18. 2014, (and Frank Nagle), "Digital Dark Matter and the Economic Contribution of Apache," *Research Policy*. v43. Pp 623-631.
19. 2013 (and Yasin Ozcan), "Composition of Innovative Activity in ICT Equipment R&D," *Loyola University Chicago Law Journal*, V45 (2), Winter. Pp. 479-523.
20. 2013, (and Josh Lerner and Scott Stern), "Digitization, Innovation and Copyright: What is the Agenda?" *Strategic Organization*. 11(1), pp 110-121, February.
21. 2013, (and Yurov Kirill, Richard Potter, Mark Shanley), "The role of geographic location in the acquisition strategies of high-technology firms: Evidence from computer networking equipment industry," *Thunderbird International Business Review*. 55(4), July/August, pp. 371-385.
22. 2012, "Concentration of Internet Access and Entrepreneurial Truncation of Innovation," *Capitalism and Society*, Volume 7, Issue 1, Pages 1932-0213, November, Article 1.
23. 2012 (and Feng Zhu), "Is Wikipedia Biased?" *American Economic Review*. May, pp 343-348.

24. 2012, (And Avi Goldfarb and Chris Forman), "The Internet and Local Wages: A Puzzle," *American Economic Review*. February. 102(1), pp. 556-575.
25. 2012, (And Sarit Markovich), "Pricing Experience Goods in Information Goods Markets: The Case of E-Business Service Providers," *International Journal of the Economics of Business*. 19(1). Pp 71-91.
26. 2011, (and Ryan McDevitt), "The Broadband Bonus: Estimating Broadband Internet's Economic Value," *Telecommunications Policy*, 35, pp 617-632.
27. 2011, (and Ryan McDevitt), "Evidence of a Modest Price Decline in US Broadband Services," *Information Economics and Policy*. 23(2), pp 200-211.
28. 2010, "The Emergence of the Internet: Collective Invention and Wild Ducks," *Industrial and Corporate Change*. 19(5), Pp. 1521-1562.
29. 2009, "Glimmers and Signs of Innovative Health in the Commercial Internet," *Journal of Telecommunication and High Technology Law*. Pp. 25 – 78.
30. 2008 (and Chris Forman and Avi Goldfarb), "Understanding Inputs into Innovation: Do Cities Substitute for Internal Firm Resources?" *Journal of Economics and Management Strategy*. Pp 295-316.
31. 2008, "Economic Experiments and Industry Know-how in Internet Access Markets," in (eds) Adam Jaffe, Josh Lerner and Scott Stern, *Innovation, Policy and the Economy*, Volume 8, MIT Press. Pp. 59-109.
32. 2007, (and Greg Stranger), "Pricing in the Shadow of Firm Turnover: ISPs in the 1990s." *International Journal of Industrial Organization*. 26 (3), pp. 625-642.
33. 2007 (And Tom Downes), "Understanding Why Universal Service Obligations May Be Unnecessary: The Private Development of Local Internet Access Markets" *Journal of Urban Economics*. 62, pp 2-26.
34. 2006 (and Angelique Augereau and Marc Rysman), "Coordination versus Differentiation in a Standards War: 56K modems." *Rand Journal of Economics*. 34 (4), pp. 889-911.
35. 2006 (and Mike Mazzeo), "Differentiated Entry into Competitive Telephony," *Journal of Industrial Economics*. LIV (3), September. Pp 323-350.
36. 2005 (and Avi Goldfarb and Chris Forman) "How did location affect adoption of the commercial Internet? Global village vs. urban leadership," *Journal of Urban Economics*. 58(3), pp. 389-420. *Highly Cited Author Award, 2004-08*.

37. 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*.
38. 2004 (and Marc Rysman), "Testing for Agglomeration and Dispersion," *Economics Letters*.
39. 2004 (Chris Forman and Avi Goldfarb), "Geographic Location and the Diffusion of Internet Technology," *Electronic Commerce Research Applications*, 4(1), pp 1-13.
40. 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.
41. 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.
42. 2002 (and Tom Downes), "Universal Access and Local Commercial Internet Markets," *Research Policy*, 31, pp 1035-1052.
43. Winter 2001, "Technological Mediation and Commercial Development in the Early Internet Access Market," *California Management Review*, 43, 2, pp 75-94.
44. 2001 (and Angelique 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.
45. 2001 (and Tim Bresnahan), "The economic contribution of information technology: Towards comparative and user studies," *Journal of Evolutionary Economics*, v11, pp 95-118.
46. 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, Volume 1*. MIT Press. Pp. 151-186.
47. December, 2000, "Building and Developing the Virtual World: The Commercial Internet Access Market." *Journal of Industrial Economics*, December. 48 (4):391-411.
48. Winter, 2000, "The Commercialization of Information Infrastructure as Technology Mediation: The Internet Access Market." *Information System Frontiers*, 1:4, pp 329-348.
49. 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.
50. *December, 1999* (and Tim Bresnahan), "Technological Competition and the Structure of the Computing Industry," *Journal of Industrial Economics*. 47. March, pp 1-40.
 51. *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*.
 52. *Winter, 1998* (and Jim Wade), "The Product Life Cycle in the Commercial Mainframe Computer Market, 1968-1983," *Rand Journal of Economics*.
 53. *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.
 54. *May, 1998* (and Garey Ramey), "Market Structure, Innovation, and Vertical Product Differentiation," *International Journal of Industrial Organization*, Vol 16 (3), Pp. 285-311.
 55. *May, 1998*, "Industrial Economics and Strategy: Computing Platforms," *IEEE Micro: Chips, Systems, and Applications*, Special issue on Standardization, 18 (3), Pp. 43-53.
 56. *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.
 57. *January, 1996* (and Tim Bresnahan), "Technical Progress and Co-Invention in Computing and in the Use of Computers." *Brookings Papers on Economic Activity: Microeconomics*, Pp. 1-78.
 58. *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.
 59. *December 1995* (and Pablo Spiller), "Modern Telecommunications Infrastructure and Economic Activity: An Empirical Investigation." *Industrial and Corporate Change*, 4(4), pp. 647-665.
 60. *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.
 61. *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.

62. *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.
63. *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.
64. *December, 1993*, "Markets, Standardization, and the Information Infrastructure," *IEEE Micro, Chips, Systems, and Applications*, Special Issue on Standards, 13 (6), pp. 36-51.
65. *Spring, 1993*, "Did Installed Base Give an Incumbent any (Measurable) Advantages in Federal Computer Procurement?" *Rand Journal of Economics*, 24(1), pp. 19-39.
66. *April, 1993*, "Procedural Rules and Procurement Regulations: Complexity Creates Trade-offs," *Journal of Law, Economics, and Organizations*, pp 159-180.
67. *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.
68. *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
69. *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.
70. *Fall, 1990*, (and Paul David), "The Economics of Compatibility of Standards: A Survey." *Economics of Innovation and New Technology*, Vol. 1., pp 3-41.
71. *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.

Chapters in Books

1. *Forthcoming*, “Digital Infrastructure.” Edited by Edward Glaeser and James Poterba. Economics of Infrastructure Investment. NBER Book. University of Chicago Press.
2. *Forthcoming*, (and Chris Forman and Avi Goldfarb), “Geographic Inequality and the Internet,” in (ed) Eszter Hargittai, *Handbook of Inequality*. Cheltenham, UK: Edward Elgar Publishing.
3. 2020, “An Archetype for Outsiders in Technology Commercialization.” In (ed) William Aspray, *Historical Studies in Computing, Information, and Society: Insights from the Flatiron Lectures*. (Springer history of computing series.) Springer Publishing; Cham, Switzerland. Pp 137-172.
4. 2018, (and Chris Forman and Avi Goldfarb), “How Geography Shapes – and is Shaped by – the Internet.” in (ed) Gordon Clark, MaryAnn Feldman, Meric Gertler, and Dariusz Wojcik, *The New Oxford Handbook of Economic Geography*, Oxford University Press. Pp. 269-285.
5. 2015, (and Chris Forman and Avi Goldfarb), “Information Technology and the Distribution of Economic Activity.” In (Eds) Adam Jaffe and Ben Jones, *Rethinking Science and Innovation Policy*, NBER Volume, University of Chicago Press.
6. 2015, “Introduction,” in Avi Goldfarb, Shane Greenstein and Catherine Tucker), *The Economic Analysis of the Digital Economy*, NBER conference book, University of Chicago Press.
7. 2013 (and Avi Goldfarb and Catherine Tucker), “Introduction,” in Editors, Shane Greenstein, Avi Goldfarb and Catherine Tucker, *The Economics of Digitization*, Edward Elgar; Cheltenham, UK.
8. 2013 (and Avi Goldfarb and Chris Forman), “Technology Adoption,” *The Palgrave Encyclopedia of Strategic Management*.
9. 2012, “Economic Experiments and the Development of Wi-Fi.” Edited by Steven Kahl, Michael Cusumano, and Brian Silverman. *Advances in Strategic Management*, V 29. Chapter 1, pp. 3-33. Emerald Group Publishing; Bingley, UK.
10. 2012 (and Ryan McDevitt), “Measuring the Broadband Bonus in 20 OECD Countries,” *OECD Digital Economy Papers*, No. 197, OECD Publishing.
<http://dx.doi.org/10.1787/5k9bcwkg3hwhf-en>
11. 2012, “Internet Infrastructure,” in *Handbook of Digital Economics*. Edited by Martin Peitz and Joel Waldfogel. Chapter 1, Pp. 3-33. Oxford University Press; New York, NY.

12. 2012, (and Tim Bresnahan and Rebecca Henderson) “Schumpeterian Economies and Diseconomies of Scope: Illustrations from the Histories of IBM and Microsoft,” *The Rate and Direction of Technical Change, 50 Year Anniversary*, Edited by Josh Lerner and Scott Stern, University of Chicago Press. Pp 203-276.
13. 2012, “The absence of data for measuring the economic impact of IT in the US,” in *Regulation and Performance of Communications and Information Networks*, Edited by Gary Madden, Gerry Faulhaber, and Jeffery Petchey, Edward Elgar Press; Cheltenham, UK. Pp 328-344.
14. 2011, (and Ryan McDevitt), “Broadband Internet’ Impact on Consumers in Seven Countries,” in *ICT and Performance: Toward Comprehensive Measurement and Analysis*. Edited by Randy Weiss, Fundacion Telefonica. Madrid, Spain. Pp. 35-52.
15. 2011, (and Ryan McDevitt), “The Global Broadband Bonus: Broadband Internet’s Impact on Seven Countries,” in *The Linked World: How ICT is Transforming Societies, Cultures and Economies*. Edited by Bart Van Ark, Randall Weiss, Katherine Schinasi, Ariel and Fundacion Telefonica, <http://ictlinkedworld.com/eng/book.php>.
16. 2011, “Nurturing the Accumulation of Innovations: Lessons from the Internet,” in *Accelerating Innovations in Energy. Insights from Multiple Sectors*, Edited by Rebecca Henderson and Richard Newell, University of Chicago Press. Pp 189-224.
17. 2010, “Standardization, Complexity, and Transitional Technology Markets,” in (eds) Sherrie Bolin and Carl Cargill, *The Standards Edge: Unifier or Divider*, pp. 51-60.
18. 2010, “Innovative Conduct in U.S. Commercial Computing and Internet Markets,” For *Handbook on the Economics of Innovation*, edited by Bronwyn Hall and Nathan Rosenberg. Burlington: Academic Press. Pp. 477-538.
19. 2009, “Open Platform Development and the Commercial Internet.” *Platforms, Innovation and Competition*, Edited by Annabelle Gawer. Edward Elgar; Northampton, MA. Pp, 219-250.
20. 2009, “Puzzles and Treasure,” forward to William C. Lowe and Carey Sherbune, *No-Nonsense Innovation: Practical Strategies for Success*, Morgan James Publishing LLC; New York.
21. 2008, (and Victor Stango) “The Economics and Strategy of Standards and Standardization,” for (ed) Scott Shane, *Handbook of Technology and Innovation Management*. Chapter 9, pp. 267 – 293. John Wiley and Sons, Ltd.
22. 2008, “Computer Industry”, in (eds), David Genesove et al, *The New Palgrave Dictionary of Economics*.

23. 2008, "Development of Information and Communication Technology," in (ed) Robin Mansell, *International Encyclopedia of Communication*, Blackwell Press. Pp. 2221 – 2225.
24. 2008, "The Evolution of Market Structure for Internet Access in the United States." in (eds) William Aspray and Paul Ceruzzi, *The Commercialization of the Internet and its Impact on American Business*, MIT Press. Pp 47-104.
25. 2007 (and Jeff Prince), "The Diffusion of the Internet and the Geography of the Digital Divide," in (Eds. Robin Mansell, Chrisanthi Avgerou, Danny Quah, and Roger Silverstone), *Oxford Handbook on ICTs*, Oxford University Press. Pp. 168-195.
26. 2007, (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.
27. 2007, "Convergence and Variety in Exploration," Forward for (ed) Sangin Park, *Strategies and Policies in Digital Convergence*, Idea Group Inc.; Hershey, PA., pp. ix–xi.
28. 2007 (and Victor Stango), "Introduction," *Standards and Public Policy*, Cambridge Press.
29. 2007 (and Mark Rysman), "Coordination Costs and Standard Setting: Lessons from 56K" in (eds, Shane Greenstein and Victor Stango), *Standards and Public Policy*, Cambridge Press.
30. 2006, "The Industrial Economics of Computing," in (ed) Shane Greenstein, *Computing*, Edgar-Elgar Press, UK.
31. 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. Pp 289-364.
32. 2004, "Technological Mediation as Strategy: The Case of ISPs," in (ed) Subir Chowdhury, *Next Generation Business Handbook*, John Wiley and Sons, pp. 1128-1156..
33. 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.
34. 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.
35. 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.
36. 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.
 37. 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.
 38. 2000, "Empirical Evidence on Commercial Internet Access Providers' Propensity to Offer new Services," (ed) Benjamin Compaign and Ingo Vogelsang. *The Internet Upheaval, Raising Questions and Seeking Answers in Communications Policy*. MIT Press. Pp 253-276.
 39. 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.
 40. 1999 "Industrial Convergence," in (Ed) Richard Dorf, *The Technology Management Handbook*, CRC Press.
 41. 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.
 42. 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.
 43. 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.
 44. 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.

45. 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.
46. 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.
47. 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.

Published Proceedings, monographs and reports

1. 2013, (and Brad Burnham, Neil Hunt, Kevin McElearney, Marc Morial, Dennis Roberson, Charles Slocum), *Issues in Data Caps and Usage Based Pricing*, A report of the Economic Impact Working Group, Open Internet Advisory Committee. May 5, 2013. *Chair for the working group.* <http://transition.fcc.gov/cgb/oiaac/Economic-Impacts.pdf>
2. 2011, "The Testimony of Professor Shane Mitchell Greenstein," United States House of Representatives, Committee on Energy and Commerce, Subcommittee on Communications, Technology and the Internet, "House J. Res. 37, Disapproving the Rule Submitted by the Federal Communications Commission with Respect to Regulating the Internet and Broadband Industry Practices." March 9, 2011. <http://republicans.energycommerce.house.gov/Media/file/Hearings/Telecom/030911/Greenstein.pdf>
3. 2011, "Responses to the questions of the Honorable Henry A. Waxman, April 11, 2011." <http://republicans.energycommerce.house.gov/Media/file/Hearings/Telecom/030911/Greenstein.pdf>
4. 2011 (and Chris Forman and Avi Goldfarb), "Local Capabilities and Broadband Bandwidth at Community Anchor Organizations," For the National Telecommunications and Information Administration. January 31, 2011. <http://www.technet.org/the-national-broadband-map-early-results-from-social-science-research/>
5. 2010, "Transaction Cost, Transparency, and Innovation for the Internet." Filing in 09-191, In the Matter of Preserving the Open Internet Broadband Industry Practices, Federal Communications Commission, <http://fjallfoss.fcc.gov/ecfs/>. (Note: Cited in FCC final report, 10-201, Issued December 23, 2010).
6. 2010, "Evidence of a Modest Price Decline in US Broadband Services." Filing in 09-51, In the Matter of a National Broadband Plan for Our Future. <http://fjallfoss.fcc.gov/ecfs/>.

(Note: Cited in *Connecting American: The National Broadband Plan*.)

7. *March 2007*, "Data Constraints and the Internet Economy: Impressions and Imprecision," Position paper for NSF/OECD sponsored meeting on "Social and Economic Factors Shaping the Future of the Internet," <http://www.oecd.org/dataoecd/5/54/38151520.pdf>. Proceedings of meeting held January 31, 2007 in Washington D.C.
8. *October 2003* (and Chris Forman and Avi Goldfarb), "Adoption of the Internet by Commercial Establishments: Urban Density, Global Village, and Industry Composition," *Proceedings of the Fifth International Conference on Electronic Commerce*, eds. Norman Sadeh, 186-194.
9. *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.
10. *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.
11. *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.
12. *June, 1998* (and Tim Bresnahan), "The Economic Contribution of Information Technology: Value Indicators in International Perspective." Organization for Economic and Cooperative Development. Paris, France.
13. *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.
14. *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.
15. *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.

Invited Publications, Editorials, and Write-ups of Research

1. 2020. "IT Job Wages are no Longer Exceptional." HBS Working Knowledge. <https://hbswk.hbs.edu/item/it-jobs-are-no-longer-exceptional>.
2. 2020. "The Fox and the Shepherd Problem." Symposium on Big Tech and the Digital Economy: The Moligopoly Scenario. <https://truthonthemarket.com/2020/10/18/the-fox-and-shepherd-problem/>
3. 2020. Economics of Digitization, *NBER Reporter*. 2020:2. <https://www.nber.org/reporter/2020number2/#report>
4. 2020. (Ran Zhuo, Bradley Huffaker, kc claffy) "GDPR and Internet Interconnection," Voxeu.com. March 1. <https://voxeu.org/article/gdpr-and-internet-interconnection>
5. 2019, "The Legacy of the 2010s: Harvard Experts Reflect on Some of the Most Important Moments and Cultural Trends. The Rise of the Smart Phone and Streaming Services." *Harvard Gazette*, December 23. Juan Siliezar, Harvard Staff Writer. <https://news.harvard.edu/gazette/story/2019/12/harvard-faculty-and-staff-on-the-biggest-moments-of-the-2010s/>
6. 2019, "La Digitalization del Trabajo (The Digitization of Work)" by Eugenia Mitchelstein and Pablo J. Boczkowski, Opinion, Infobae, <https://www.infobae.com/opinion/2019/02/15/la-digitalizacion-del-trabajo/>.
7. 2018, "Shane Greenstein on Jobs, Inequality, Financial Crises, and the Future of the Internet," By Devjani Roy, Growth Policy.org, Harvard Kennedy School, <https://growthpolicy.org/featured/shane-greenstein-on-jobs-inequality-financial-crises-and-the-future-of-the-internet>, May 29.
8. 2018, Interview by Sean Silverstone. "Distance Still Matters in Business, Despite the Internet," Working Knowledge, <https://hbswk.hbs.edu/item/distance-still-matters-in-business-despite-the-internet>. May 24.
9. 2018. (and Jeff Prince). "Does Original Content Help Streaming Services Attract More Subscribers?" HBR Online. <https://hbr.org/2018/04/does-original-content-help-streaming-services-attract-more-subscribers>. April 24.
10. 2018, Liran Einav, Shane Greenstein, and Scott Stern, "Throwing a Bresfest to fete friend and a colleague," <https://siepr.stanford.edu/news/throwing-bresfest-fete-friend-and-colleague>, April 9.
11. 2018. "Innovation from the Edges." Viewpoint. *Communications of the ACM*. 61(2). February. DOI: 10.1145/3107238

12. 2017. HuffPo, Forbes Online, (based on Quora Answer). The Internet of Things is Creating Technological Scaling Challenges. http://www.huffingtonpost.com/entry/the-internet-of-things-is-creating-technological-scaling_us_58ed4fd3e4b0ea028d568dcf, <https://www.forbes.com/sites/quora/2017/04/13/the-expanding-internet-of-things-creates-significant-challenges-for-telecom-companies/#7d8e5476c24e>, 4/14/2017.
13. 2016. Inc.com, HuffPo, Apple News (based on Quora answer). The Brightest People Do Nine Things that Really Stand out, <http://www.inc.com/quora/the-brightest-people-do-9-things-that-really-stand-out-says-a-harvard-prof.html>. 11/18/2016.
14. 2016. (and Feng Zhu), Harvard Business Review Online, HBR.org, How Wikipedia Keeps Political Discourse from Turning Ugly,” <https://hbr.org/2016/11/how-wikipedia-keeps-political-discourse-from-turning-ugly>.
15. 2016, “Web Surfers Have a Schedule and Stick to it.” By Julia Hanna. Harvard Business School Working Knowledge. <http://hbswk.hbs.edu/item/web-surfers-have-a-schedule-and-stick-to-it>
16. 2016, “What does a skunk works do?” *ComputingEdge*, V 2, N 7, pages 50-51.
17. 2016, June 27, (and Martin Peitz and Tomasso Valletti), Neutrality rules will make winners and losers out of businesses. *Harvard Business Review*. <https://hbr.org/2016/06/net-neutrality-rules-will-make-winners-and-losers-out-of-businesses>.
18. 2016, May 31, “Will an Internet Fast Lane Ruin the Web?” By Tim Hyde. <https://www.aeaweb.org/research/will-an-internet-fast-lane-ruin-the-web>.
19. 2016, March 6, “From the Net to the Masses,” *Foreign Affairs*, Science and Technology Subsection, <https://www.foreignaffairs.com/articles/2016-03-06/net-masses>
20. 2015, Dec 15, “Consider This: Without Immigrants, There Would be no Google.” Forbes/Leadership. <http://www.forbes.com/sites/hbsworkingknowledge/2015/12/15/without-immigrants-there-would-be-no-google/>
21. 2015, Nov 2, “Dear Internet: You are extraordinary, but not exceptional.” By Carmen Nobel, Harvard Business School Working Knowledge, <http://hbswk.hbs.edu/item/dear-internet-you-are-extraordinary-but-not-exceptional>. Also appeared in Forbes online, <http://www.forbes.com/sites/hbsworkingknowledge/2015/11/02/dear-internet-you-are-extraordinary-but-not-exceptional/#f45c6c03c41a>.
22. 2015, June 2, “Can Wikipedia be trusted?” Kellogg Insight, staff writer, <http://insight.kellogg.northwestern.edu/article/can-wikipedia-be>

[trusted?utm_source=subscribeA&utm_medium=email&utm_campaign=mailer062015.](#)

23. 2014, December 3, “Wikipedia is more biased than Britannica, but don’t blame the crowd,” Harvard Business Review, Internet, Walter Frick, staff writer, <https://hbr.org/2014/12/wikipedia-is-more-biased-than-britannica-but-dont-blame-the-crowd>.
24. 2014, May 23, (and Chris Forman and Avi Goldfarb), “Did the Internet Prevent all Invention from Moving to one Place?” VoxEU.org. <http://www.voxeu.org/article/did-internet-prevent-all-invention-moving-one-place>.
25. 2013, March, “Measuring Consumer Surplus Online,” The Economist, Free Exchange Economics, <http://www.economist.com/blogs/freeexchange/2013/03/technology-2>.
26. 2013, January, (and David Dranove and Chris Forman and Avi Goldfarb), “Does Health Information Technology Reduce Costs?” The NBER Digest, staff writer Matt Nesvisky.
27. 2012, “Is Wikipedia Biased?” *Kellogg Insight*, John Pavlus staff writer, http://insight.kellogg.northwestern.edu/article/is_wikipedia_biased/.
28. 2012, (and Pablo Boczkowski and Fabian Bustamante), “Research, Teaching, and Leading in Innovation,” *Dialogue, School of Communication at Northwestern, Fall 2012*, pp 2-3.
29. 2012, (and Chris Forman and Avi Goldfarb) “The internet is everywhere, but the economic payoff is not.” *Communications of the ACM*. June.
30. 2010, December, “Prices in US Broadband Services,” The NBER Digest, Laurent Belsie staff writer, <http://www.nber.org/digest/>.
31. 2010, (and Josh Lerner and Scott Stern) “The Economics of Digitization: An Agenda for NSF,” American Economic Association, Ten Years and Beyond: Economists Answer NSF's Call for Long-Term Research Agendas. Available at SSRN: <http://ssrn.com/abstract=1889153>
32. 2010, “Why Broadband Prices haven’t decreased. Creating the first broadband consumer price index,” Kellogg Insight, September. <http://insight.kellogg.northwestern.edu/>, Katherine Gammon, Staff Writer. (This article brought down the servers on the first day. Most traffic by any Kellogg Insight article to date. Most comments by any article.)
33. 2009, “7 Big Questions: Internet Regulation,” *IBM Forward View*, http://www-304.ibm.com/businesscenter/cpe/download0/187805/FV0911_Big7_ShaneGreenstein.pdf?ca=fv0911&me=feature5&re=ushomepdf

34. 2009, "The Broadband Price is not Right," *Communications of the ACM*. November.
35. 2009, (and Greg Rosston), "Preface: Special issue on auctions:" *Information Economics and Policy*, Vol. 21. Pp. 85-89.
36. 2009, "The Internet, Wages, and Consumer Welfare," *NBER Digest*. April.
37. 2008, "Is the battle between HD-DVD and Blu-Ray really over? What can we learn from it?" *Freakonomics Forum*, *New York Times*, www.freakonomics.blogs.nytimes.com. March, 4.
38. 2008, "What Value did Broadband Create?" *IEEE Potentials*, February/March.
39. 2007, "Economic Experiments in Internet Access Markets," *First Monday*, Volume 12, Number 6. June.
40. 2007, "Does Location Matter for the Adoption of Internet Technologies in Business?" Kellogg Insight, August. <http://insight.kellogg.northwestern.edu/>, Anne Sasso, Staff writer.
41. 2006, Invited comment on "Open Standards, Open Source, and Open Innovation" by Elliot Maxwell, in *INNOVATIONS: Technology, Governance, Globalization*, V1 (4), Fall, pp. 3-4, <http://mitpress.mit.edu/innovations>.
42. 2006, (and David Waterman and Ingo Vogelsang), "Forum on the future of the telecommunications industries," in *Information Economics and Policy*, Vol. 18, 3. pp 241.
43. 2006, "Format Wars and Complexity," *IEEE Potentials*, July/August.
44. September 2004, (And Chris Forman and Avi Goldfarb) "City or Country: Where do Businesses use the Internet?" Federal Reserve Bank of San Francisco Letter. Number 2004-24. <http://www.frbsf.org/publications/economics/letter/2004/el2004-24.pdf>.
45. 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).
46. 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).
47. Fall, 2000, "Computers and the Internet," NBER reporter, pp 15 - 17.
48. February, 2000, "Death of a Sophomore." *California Monthly*, Recalling Cal Section.

49. *April, 1998*, “Universal Service in the Digital Age: The Commercialization and Geography of US Internet Access,” *Research Brief*, Council on Library and Information Resources.
50. *June, 1997*, “Moping about Monopoly,” Policy Forum, Institute for Government and Public Affairs, pp 1-4.
51. *April 12, 1996*, Letter to the Editor, Paul Attewell’s The Productivity Paradox, *Chronicle of Higher Education*, page B6.
52. *Fall, 1990*, (and Bruce Bruemmer), "The Tape Story Tapestry: Historical Research in the age of Digital Technology," *Midwestern Archivist*, XV(2), pp 77 - 90.

Essays for IEEE Micro, Chips, Systems and Applications, Micro-Economics Department

- 1 February 2020, “Technology Policy Dilemmas in the new Administration.” 44(1)
- 2 December 2020, “The Fox and Shepherd Problem.” 43(6)
- 3 October 2020, “Triggers, transmission, and adjustments.” 43(5)
- 4 August 2020, “Uncomfortable Economic Waters,” 43(4)
- 5 June 2020, “Pandemics and the Dismal Technology Economy.” 43(3)
- 6 April 2020, “Expertise at our Fingertips.” 43(2)
- 7 February 2020, “The Vital Two Percent.” 43(1)
- 8 December 2019, “Antitrust in Three Acts.” 42(6).
- 9 *October 2019*, “Earning Stripes in Medical Machine Learning.” 42(5).
- 10 *August 2019*, “The aftermath of the Dyn DDOS attack,” 42(4)
- 11 *June 2019*, “Misapplied Metaphors in AI Policy,” 42(3)
- 12 *April 2019*, “Where the Frontier Thrives: Bricks, Mix, and Zip.” 42(2)
- 13 *February 2019*, “Six Infrastructure Trends.” 42(1).
- 14 *December 2018*, “Organized for Cycles of Change.” 41(6).
- 15 *October 2018*, “Free Software without a Free Lunch or Free Beer,” 41(5)
- 16 *August 2018*, “The Technology Tel,” 41(4)
- 17 *June 2018*, “Adjusting to Autonomous Trucking.” 41(3)
- 18 *April 2018*, “Outsider’s Pathway to Prominence.” 41(2)
- 19 *February 2017*, “The Paradox of Technological Déjà vu.” 41(1)
- 20 *December 2017*, “The Hush Hush Norm,” 40(6)
- 21 *October 2017*, “Insider Privileges,” 40(5)
- 22 *August, 2017*, “Moore’s Law and Economic Architectures.” 40(4)
- 23 *June, 2017*, “The Two Sides to Scale.” 40(3)
- 24 *April, 2017*, “The Value of Free in GDP.” 40(2)
- 25 *February, 2017*, “Technology Policy and the Trump Administration.” 40(1)
- 26 *December 2016*, “Congestion on the Last Mile.” 39(6)
- 27 *October, 2016*, “No Rosetta Stone for Market Vitality,” 39(5)
- 28 *August, 2016*, “Ten Open Questions for a Techno-Optimist.” 39(4)

- 29 *June, 2106*, “Economic Growth from Technical Advance.” 39(3)
- 30 *February, 2016*, “What does a Skunk Works do?” 39(1)
- 31 *December, 2015*, “Insiders, Outsiders, and an Existentialist.” 38(6)
- 32 *October, 2015*, “Twenty Years of the Commercial Internet, Part II.” 37(5)
- 33 *August, 2015*, “Who is Gordon Moore, and Why is There a Law Named for him?” 37(4)
- 34 *June, 2015*, “Twenty Years of the Commercial Internet.” 37(3)
- 35 *April 2015*, “Behind the Buzz of Behavioral Data.” 37(2)
- 36 *February 2015*, “Networking Standards and Russell’s Revisionism.” 37(1)
- 37 *October 2014*, “Enough Variety and Diversity?” 36(5)
- 38 *August 2014*, “Baking the Data Layer,” 35 (4).
- 39 *June, 2014*, “The Academic and Business Marriage,” 35 (3).
- 40 *April, 2014*, “The Fault Lines along Fast Lanes,” 35(2).
- 41 *February, 2014*, “The Irony of Public Funding.” 34 (1)
- 42 *December, 2013*, “How much Apache?” 33 (6).
- 43 *October, 2013*, “Digital Public Goods,” 33 (5).
- 44 *August, 2013*, “Platform Conflicts,” 33(4).
- 45 *June, 2013*, “Differentiated Platforms,” 33(3)
- 46 *April, 2013*, “An Online Honesty Box,” 33(2).
- 47 *February, 2013*, “Gaming Structure.” 33(1).
- 48 *December, 2012*, “Managing Complements” 32 (6).
- 49 *October, 2012*, “The Prevailing View,” 32 (5).
- 50 *August, 2012*, “Calm Economics,” 32 (4).
- 51 *June, 2012*, “The Secret Life of Wally Madhavani,” 32 (3).
- 52 *April, 2012*, “A big Payoff.” 32 (2).
- 53 *February 2012*, “The Range of Linus’ Law.” 32 (1).
- 54 *December 2011*, “Steve Jobs and the Economics of one Entrepreneur,” 31 (6).
- 55 *October 2011*, “The Wi-Fi Journey,” 31(5).
- 56 *August 2011*, “An Honest Policy Wonk,” 31 (4).
- 57 *June 2011*, “The Open Internet Order,” 31 (3)
- 58 *April, 2011*, “The Direction of Broadband Spillovers,” 31 (2).
- 59 *February, 2011*, “Digital Dark Matter,” 31 (1).
- 60 *December, 2010*, “Building Broadband Ahead of Digital Demand,” 30 (6).
- 61 *October, 2010*, “Gate-keeping Economics.” 30 (5)
- 62 *August, 2010*, “Digitization and Value Creation.” 30 (4)
- 63 *June, 2010*, “Standardization and Coordination.” 30(3).
- 64 *April, 2009*, “Bleeding Edge Mass Market Standards.” 30 (2).
- 65 *February, 2009*, “Google’s Next Chapter.” 30(1)
- 66 *December, 2009*, “A Network of Platforms,” 29 (6)
- 67 *October, 2009*, “Does Google have too much Money?” 29 (5)
- 68 *August 2009*, “Soccer Mom Messaging is The Poetry of our Age.” 29 (4)
- 69 *June 2009*, “The Revolution in Spectrum Allocation.” 29 (3)
- 70 *April 2009*, “Broadband Build-out as Economic Stimulus.” 29 (2)
- 71 *February 2009*, “Symptoms of Healthy Innovativeness.” 29 (1)
- 72 *December 2008*, “Chicken Little Predictions” 28 (6)

- 73 *October 2008*, "Slouching towards Dystopia," 28 (5)
- 74 *August 2008*, "Voting and Economic Asymmetry," 28 (4).
- 75 *April 2008*, "The Long Arc Behind Bill Gate's Wealth, Part 2." 28 (2)
- 76 *February 2008*, "The Long Arc Behind Bill Gate's Wealth," 28 (1)
- 77 *November 2007*, "Innovation at the Edges," 27(6).
- 78 *October 2007*, "The Dog-Days for Broadband," 27 (5).
- 79 *August 2007*, "The Fifteen Billion Dollar Broadband Bonus," 27 (4).
- 80 *June 2007*, "Did the Price of the Internet Drop?" 27 (3).
- 81 *April 2007*, "Wagging Wikipedia's Long Tail," 27(2).
- 82 *February 2007*, "The High Costs of a Cheap Lesson," 27(1).
- 83 *December 2006*, "Four Nightmares for Net Neutrality." 26 (6).
- 84 *October 2006*, "Ubiquitous Clicks and Complements." 26 (5).
- 85 *August 2006*, "Legislating Entrepreneurship, an Oxymoron?" 26 (4).
- 86 *June, 2006*, "Room for a Thousand Flowers to Bloom," 26 (3).
- 87 *April, 2006*, "Andy's Acceleration and Moore's Momentum," 26 (2)
- 88 *February, 2006*, "Format Wars all Over Again," 26 (1).
- 89 *December, 2005*, "Wireless and Electrical Markets: Becoming Similar?" 25 (6).
- 90 *October, 2005*, "Outsourcing and two Strategies for Climbing the Value Chain," 25 (5).
- 91 *August, 2005*, "The Explorer and the Expander, Both Early and Late," 25 (4).
- 92 *June, 2005*, "Anatomy of a Foresight Trap," 25 (3).
- 93 *April, 2005*, "Communications Consolidation After an Era of Constraints," 25 (2).
- 94 *February, 2005*, "Not a Mellifluous March to Maturity," 25 (1).
- 95 *December, 2004*, "Canaries, Whips and Sails," 24 (6).
- 96 *October, 2004*, "Creative Destruction and Deconstruction." 24 (5).
- 97 *August, 2004*, "The Diamond-Wafer Paradox, a Modern Mystery." 24 (4).
- 98 *June, 2004*, "Imitation Happens," 24 (3).
- 99 *April, 2004*, "The Paradox of Commodities," 24 (2).
- 100 *February, 2004*, "Why Inventors are not Famous," 24 (1).
- 101 *October, 2003*, "Jumping on Bandwagons," 23 (5).
- 102 *August, 2003*, "Moore Meets Malthus in Multiples." 23 (4).
- 103 *June, 2003*, "An Era of Error," 23 (3).
- 104 *April, 2003*, "Too much Backbone?" 23 (2).
- 105 *February, 2003*, "Where did the Internet go?" 23 (1).
- 106 *December, 2002*, "Which Industries use the Internet?" 22 (6).
- 107 *October, 2002*, "The Price is not Right." 22 (5).
- 108 *August, 2002*, "The Crash in Competitive Telephony," 22 (4).
- 109 *June, 2002*, "Markets for Technology," 22 (3).
- 110 *April, 2002*, "Competition Policy for Innovative Industries," 22 (2).
- 111 *February, 2002*, "The Ride Before the Fall," 22 (1).
- 112 *December, 2001*, "E-Business Infrastructure" 21 (6).
- 113 *October, 2001*, "Explaining Booms, Busts and Errors" 21 (5).
- 114 *August, 2001*, "An Earful about Zvi's Email," 21 (4).
- 115 *June, 2001*, "Shortfalls, Downturns and Recessions," 21 (3).
- 116 *April, 2001*, "Pricing Internet Access," 21 (2).

- 117 *February, 2001*, "Measure for measure in the new Economy," 21 (1).
- 118 *December, 2000*, "Flashpoints in the new Economy," 20 (6).
- 119 *October, 2000*, "Falling Through the Cracks at Microsoft," 20 (5).
- 120 *August, 2000*, "Hung up on AT&T," 20 (4).
- 121 *June, 2000*, "An Era of Impatience," 20 (3).
- 122 *April, 2000*, "A Revolution? How do you know?" 20 (2).
- 123 *February, 2000*, "Aggressive Business Tactics: Are There Limits?," 20 (1).
- 124 *December, 1999*, "Virulent Word of Mouse," 19 (6).
- 125 *October, 1999*, "Banking on the Internet," 19 (5).
- 126 *August, 1999*, "Building the Virtual World," 19 (4).
- 127 *June, 1999*, "Forecasting Commercial Change," 19 (3).
- 128 *April, 1999*, "Bill, Act like a Mensch!," 19 (2).
- 129 *February, 1999*, "When Technologies Converge," 19 (1), pp 8-9.
- 130 *December, 1998*, "Commercializing the Internet," 18 (6), pp 6-7.
- 131 *October, 1998*, "Return of the Jaded," 18 (5), pp 4-5, 83.
- 132 *August, 1998*, "Uncertainty, Prediction and the Unexpected," 18 (4), pp76-77
- 133 *April, 1998*, "The Ties That Bind: Foreseeing Foreclosure," 18 (2), pp 4-5, 83-84.
- 134 *February, 1998*, "To have and to have not," 18 (1), pp 76-77.
- 135 *Dec, 1997*, "The Software Industry Thru an Academic Looking Glass," 17 (6)
- 136 *October, 1997*, "Considering Opinions about Convergence," 17 (5).
- 137 *August, 1997*, "The Biology of Technology," 17 (4).
- 138 *June, 1997*, "Let's Play Monopoly," 17 (3), pp. 73-74
- 139 *April, 1997*, "It has bugs, but the games are out of this world," 17 (2), pp 5-6.
- 140 *February, 1997*, "How coinvention Shapes our Market," 17 (1), pp2-3.
- 141 *December, 1996*, "Don't Call it a Highway," 16 (6), pp. 78-9.
- 142 *October, 1996*, "Repetitive Stress Injuries," 16 (5), pp. 72-73.
- 143 *August, 1996*, "Debunking the Productivity Paradox." 16 (4), pp3-4.
- 144 *June, 1996*, "Up-grading, Catching-Up and Shooting for Par." 16 (3), pp 2, 79.
- 145 *April, 1996*, "A Birthday Even a Curmudgeon Could Love," 16 (2), pp 3-4.
- 146 *February, 1996*, "The Salad Days of On-line Shopping." 16 (1), pp 68-69.
- 147 *December, 1995*, "Not a Young and Restless Market" 15 (6), pp 3-4.
- 148 *October, 1995*, "Client-Server Demand and Legacy Systems." 15 (5), pp 4-5.
- 149 *August, 1995*, "Diamonds are Forever, Computers are not." 15(4), pp 4-5.
- 150 *June, 1995*, "The Market and Computer Technology," 15 (3), pp 8-9.

Reprints

1. 2013 (and Tim Bresnahan), "Technological Competition and the Structure of the Computing Industry," *Journal of Industrial Economics*. Reprinted in (Ed) Shane Greenstein, Avi Goldfarb, and Catherin Tucker, *The Economics of Digitization*. Edward-Elgar Press, UK.
2. 2013, "Building and Developing the Virtual World: The Commercial Internet Access Market." *Journal of Industrial Economics*, December. 48 (4):391–411. Reprinted in (Ed)

Shane Greenstein, Avi Goldfarb, and Catherin Tucker, *The Economics of Digitization*. Edward-Elgar Press, UK.

3. 2008, (and Paul David), "The Economics of Compatibility of Standards: A Survey." *Economics of Innovation and New Technology*, Vol. 1, pp 3-41. Reprinted in (ed) Albert Link, *The Economics of Innovation Policy*, Edward Elgar Publishing; Camberley, Surrey, UK.
4. 2006 (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. Reprinted in (Ed) Shane Greenstein, *Computing*. Edward-Elgar Press, UK.
5. 2006 (and Tim Bresnahan), "Technological Competition and the Structure of the Computing Industry," *Journal of Industrial Economics*. Reprinted in (Ed) Shane Greenstein, *Computing*. Edward-Elgar Press, UK.
6. 2006, "Building and Developing the Virtual World: The Commercial Internet Access Market." *Journal of Industrial Economics*, December. 48 (4):391–411. Reprinted in (Ed) Shane Greenstein, *Computing*. Edward-Elgar Press, UK.
7. 2001 (and Tim Bresnahan), "The economic contribution of information technology: Towards comparative and user studies," *Journal of Evolutionary Economics*, v11, pp 95-118. 2001. Reprinted in (ed) Ulrich Witt, *Escaping Satiation, The Demand Side of Economic Growth*, Springer-Verlag, New York.
8. 2000, "Framing Empirical Research on the Evolving Structure of Commercial Internet Markets," in Erik Brynjolfsson and Brian Kahin, *Understanding the Digital Economy: Data, Tools and Research*, MIT Press. 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.

Case Writing

1. (and Nicole Tempest Keller), "DeepMap: Charting the Road Ahead for Autonomous Vehicles," N9-619-083, November 1, 2019.
2. (and John Masko), "Feeling Machines: Emotion AI at Affectiva." N1-620-058, October 29, 2019.
3. (and Danielle Golan), "Twiggle: E-Commerce with Semantic Search," Harvard Business School Case, N9-620-025. September, 2019.

4. (and Sarah Gulick), "Zebra Medical Vision." Harvard Business School Case, 619053. November, 2018.
5. (and Sarah Gulick), Teaching note for "Zebra Medical Vision." July, 2019.
6. (and Christine Snively). "Internet Data Capping Note (B)." Harvard Business School Technical Note 618-061, March, 2018.
7. (and Christine Snively). "Viacom: Democratization of Data Science." Harvard Business School Case. March 2018.
8. (and Feng Zhu and Kerry Herman). "Korea Telecom: Building a GiGAtopia." Case 617-014, April 2017.
9. (and Feng Zhu and Susie L. Ma). "Korea Telecom: Building a GiGAtopia. (B)." Case 520-060, December, 2019.
10. (and Feng Zhu and Susie L. Ma). "Korea Telecom: Building a GiGAtopia (A) and (B), Teaching Note. January, 2020.
11. (and Christine Snively). "Great Lakes Banking Group: Data Management." November 2017. TBD.
12. (and Christine Snively), "Net Neutrality: A Managerial Perspective." Technical Note 617-006, July 2016.
13. (and Christine Snively and Lisa Cox), "Internet Data Capping Note. (A) and (B)." Harvard Business School Technical Note 617-003, (Revised October 2016.)
14. (And Michael Norris). "Streaming Over Broadband: Why Doesn't My Netflix Work?" Harvard Business School Case 616-007, November 2015.
15. (And Michael Norris), "Streaming Over Broadband: Why Doesn't My Netflix Work?" Teaching Note for Harvard Business School Case 616-007, December 2016.
16. (And Marco Iansiti, and Christine Snively). "Facebook: The First Ten Years." Harvard Business School Case 616-012, October 2015.
17. (And Joshua Polhaus and Micheline-Marie Sabatte) MentorMob and the Reinvention of Learning, August, 2011. (KEL627)
18. Teaching Note: MentorMob and the Reinvention of Learning, August 2011.
19. (And Michelle Devereux). Wikipedia in the Spotlight. August, 2006. Revised August,

2009.

20. Teaching note: Wikipedia in the Spotlight, November, 2006.
21. (And Michelle Devereux). The Crisis at Encyclopaedia Britannica. August, 2006. Revised August, 2009.
22. Teaching note: The Crisis at Encyclopedia Britannica. August, 2006. Revised August, 2009.
23. (and Rebecca Frazzano and Evan Meagher) The Triumph of the Commons: Wikia and the Commercialization of Open Source Communities in 2009. (KEL464)
24. Teaching note: The Triumph of the Commons: Wikia and the Commercialization of Open Source Communities in 2009, November, 2009.

Book Reviews

1. 2016, May-June, *Harvard Magazine*, “How America Grew: A Definitive Economic History – and a Debatable and Despairing Forecast,” a review of Robert J. Gordon, *The Rise and Fall of American Growth: The U.S. Standard of Living Since the Civil War* (Princeton University Press). Pp. 68-69.
<http://harvardmagazine.com/2016/05/how-america-grew>
2. 2015, May 26. “Moore’s Law; The Life of Gordon Moore, Silicon Valley’s Quiet Revolutionary, By Arnold Thackray, David Brock, and Rachel Jones. Basic Books, New York.” *Wall Street Journal*. <http://www.wsj.com/articles/silicon-valleys-lawmaker-1432590193>
3. 2014, “The economics of information security and privacy” Edited by Rainer Bohme, 2013, Springer-Verlag; Berlin Heidelberg. xii, 321., *Journal of Economic Literature*, LI, December. Pp 18-19.
4. 2011, December, “The Wifi Journey,” Edited by Wolter Lemstra, Vic Hayes, John Groenewegen, *IEEE CS Computing Now*, <http://www.computer.org/portal/web/cnbooks>
5. June, 2005 “Innovation and Growth: Selected Economic Papers” by Jean-Phillipe Touffut, *Journal of Economics Literature*. XLII, pp 527-29.
6. 2004, “Technology and the New Economy,” by Chong-en bai and Chi-wa Yuen, *Journal of Economic Literature*.
7. 2003, “Bandwagon Effects in High Technology Industries,” by Jeffrey H. Rohlfs, *Journal of Media Economics*, 17(3), 229-232.

8. *October, 2002, "Markets for Technology: The Economics of Innovation and new Technology,"* by Ashish Arora, Andrea Fosfuri, and Alfonso Gambardella, *Academy of Management Review*.
9. *February, 1999, "Talk is Cheap,* By Robert W Crandall and Leonard Waverman," The Brookings Institute, *Telecommunications Policy*.
10. *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*.
11. *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.
12. *December, 1992, "Regulation: Economic Theory and History,* By Jack High, Editor" *Journal of Economic History*, pp. 982-983.
13. *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.
14. *September 1989, "Competition: The Economics of Technical Change,* by Paul Auerbach" *Journal of Economic History*, Vol XLIX, 3.
15. *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 under revision

October 2020, (Raviv Murciano-Goroff and Ran Zhuo), "Unsung Software and Veiled Value Creation: Illustrations from Server Software.

September 2020. (Tommy Pan Fang). "Where the Cloud Rests: Data Centers." HBS Working Paper 21-042.

September 2020, (and Ruiqing Sam Cao), "Digital Labor Market Inequality and the Decline of IT Exceptionalism." HBS Working paper 21-019.

June 2020, (Nataliya Langburd Wright and Frank Nagle), Open Source Software and Global Entrepreneurship. HBS Working Paper 20-139.

November, 2019, (And Jeff Prince), "Mobile Internet Usage and Usage Based Pricing."

January 2018, (and Klaus Ackerman), “The State of Open Source Server Software.”

2018 (and Samantha Bates, John Bowers, Jordi Weinstock, and Jonathan Zittrain), “In support of Internet Entropy: Mitigating an increasingly Dangerous Lack of Redundancy in DNS Resolution by Major Websites and services.” NBER Working paper 24317.

Working papers not submitted for publication and not otherwise accounted for

1. *2013*, “The Lexicon of Network Economics: An Applied Guide.”
2. *2011*, (and Anna Levine Taub), “Acquisitions in Communications Equipment: Lessons for the Commercialization of Innovation.”
3. *2002*, (and Jim Wade and David Barth), “Empirical Determinants of Product Obsolescence and the Product Life Cycle: An Application to the Commercial Mainframe Computer Market.”
4. *2000*, (and Cory Capps, David Dranove and Mark Satterthwaite) "The Elzinga-Horgarty Criteria and the Silent Majority Fallacy: A Critique and an Approach to Hospital Mergers." NBER Working Paper Series, Vol. w8216, pp. -, 2001. Available at SSRN: <http://ssrn.com/abstract=265309>
5. *August 2000*, "Contracting Terms for Dial-up Internet Access,"
6. *August 1999*, (and Tim Bresnahan and Harumi Ito), "The Sources and Effects of Investment Irreversibility: Large Scale Computing."
7. *September 1996* (and Pablo Spiller), "Estimating the Welfare Effects of Digital Infrastructure." NBER Working Paper # 5770.
8. *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.
9. *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

- 2019, April, Podcast, The Prognosis for AI-assisted radiology, Managing the

Future of Work, <https://www.hbs.edu/managing-the-future-of-work/podcast/Pages/podcast-details.aspx?episode=9319487>.

- 2016, November. Why Wikipedia is the Best Place on the Internet. <https://digital.hbs.edu/platforms-crowds/di-talks-wikipedia-internet/>.
- 2016, May, The Decline of Encyclopedia Britannica and Emergence of Encarta, Strategic Management Society. <https://www.youtube.com/watch?v=Z9TnF1FwB6I>.
- 2016, April, How the Internet Became Commercial, Patterns in the Deployment of Technology, Alan Olsen's American Dreams. http://www.groco.com/radio/how_the_internet_became_commercial_patterns_in_the_deployment_of_technology.aspx, and <https://www.youtube.com/watch?v=NjrILune7YM>
- 2015, December, How the Internet Became Commercial, Initiative on the Digital Economy, Sloan MIT, Andre Fradkin, <http://mitsloan.mit.edu/ide/podcasts/> or https://soundcloud.com/mit_ide.
- 2015, November 12, Google Talk, How the Internet Became Commercial, <https://www.youtube.com/watch?v=NwbMhTkmfew&feature=youtu.be>
- 2015, April 28, CITP Lunchtime talk, Princeton, <https://www.youtube.com/watch?v=p1TLTDgNB-w>
- 2010 – present, Podcasts with IEEE, Micro Economics, <http://www.computer.org/portal/web/computingnow/micro-economics>

1. *September 6, 2012*, The Wi-Fi Journey
2. *June 29, 2012*, The Open Internet Order
3. *June 13, 2012*, An Honest Policy Wonk
4. *March 2, 2012*, Steve Jobs and the Economics of one Entrepreneur
5. *February 3, 2012*, Direction of Broadband Spillover
6. *November 21, 2011*, Digital Dark Matter
7. *October 28, 2011*, Building Broadband Ahead of Digital Demand
8. *September 14, 2011*, Gatekeeping Economics
9. *August 17, 2011*, Digitization and Value Creation
10. *July 15, 2011*, Standardization and Coordination
11. *June 14, 2011*, Bleeding Edge Mass Market Standards
12. *May 24, 2011*, The Next Chapter at Google
13. *April 19, 2011*, Network of Platforms
14. *March 10, 2011*, Does Google Have Too Much Money?

15. *November 15, 2010*, Soccer Mom Messaging is the Poetry of Our Age.

16. *October 18, 2010*, Revolution in Spectrum Allocation.

- 2014, “On Bias in Wikipedia Articles,” March 11, 2014, Podcast, <http://surprisinglyfree.com/2014/03/11/greenstein/>, Hosted by Jerry Brito of the Mercatus Center, George Mason University.
- 2012, Is Wikipedia Biased? Interview for Kellogg Insight, December 1. http://insight.kellogg.northwestern.edu/article/is_wikipedia_biased/#,&http://insight.kellogg.northwestern.edu/podcast/download/2231/#.
- 2011, Interview with Professor Shane Greenstein: What has the Internet Done for the Economy? <http://www.kellogg.northwestern.edu/podcasts/insight/greenstein/shanegreenstein.mp3>, April 1.
- 2009, “7 Big Questions: Internet Regulation,” *IBM Forward View podcast*, http://www.ibm.com/businesscenter/smb/download/FV0911_ShaneGreentein.mp3?ca=fv0911&me=feature5&re=ushomemp3
- 1997, Telecommunications Policy: The Changing Landscape. Policy Soundings Series, Institute for Government and Public Affairs. University of Illinois.

Blogs and active online sites

- 2011 – present, Digitopoly (and Joshua Gans and Erik Brynjolfsson), <http://www.digitopoly.org/>
- 2012 - present, Technology, Academics, Policy, <http://www.techpolicy.com/>
Among top 5 posts for 2012, [The Craigslist Killer and Online Privacy](#)
- 2013 - present. Data Sources: Economics of Digitization. <https://economicsofdigitization.hackpad.com/Data-sources-economics-of-digitization-8LSKSVZ38oR#:h=Internet-pricing>
- 2009 - 2015, Virulent Word of Mouse. (Sponsored by Kellogg School of Management) <http://virulentwordofmouse.wordpress.com/>.

Career Accomplishments and Milestones

Personal Life

US citizen.

Married. Children born May-97, January-99, November-01, September-03.

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

- *2016-present*, the Martin Marshall Professor of Business Administration, Technology Operations and Management Unit, and Co-Chair, Digital Initiative, Harvard Business School, Harvard University.
- *2015-2016*, the MBA class of 1957 Professor of Business Administration, HBS.
- *2011-2015*, Kellogg Chair in Information Technology. Northwestern.
- *2012-2015*, School of Communications, courtesy appointment. Northwestern.
- *2001 - 2011*, Elinor and Wendell Hobbs Professor of Management & 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

- *July, 2013 – June, 2014*, Thomas Henry Carroll Ford Foundation Visiting Professor of Business Administration, Harvard Business School, and Fellow, Berkman Center for Internet and Society, Harvard University, and Visiting Scholar at the Center for Digital Business, Sloan School of Management, MIT.
- *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
- International Industrial Organization Society
- Institute of Electrical and Electronic Engineers

Positions in Academic Organizations

- *1997- present*, Research Associate, National Bureau of Economic Research, Productivity group and Industrial Organization Group
- *2010 – 2020*, Co-director, Economics of Digitization, National Bureau of Economic

Research.

- 1992-1997, Faculty Research Fellow, National Bureau of Economic Research.
- 2014-present, Faculty Associate, Berkman Center for Internet and Society.
- 1991- 96, Faculty Research Fellow, National Bureau of Economic Research, Productivity group.
- 2005-present, Research Associate, Conference on Research in Income and Wealth.
- 2000- 2015, Affiliate, Center for the Study of Industrial Organization, Northwestern University.
- 1999- 2015, Research Associate, Institute for Policy Research, Northwestern University.
- 1995 - 97, Affiliate, Institute for Government and Policy Affairs, University of Illinois.

Board Service

- 1995 - present, Columnist and Board member, *IEEE Micro*
- 2009 – present, Editorial Board, *Telecommunications Policy*.
- 2014 – present, Advisory Board, *Research Policy*.
- 2016-present, Technology Policy Institute, Board of Academic Advisors.
- 2015-present, Board, Industrial Organization Society (President, 2014-2015, Vice President 2011-12).
- 2001 - 2014, Student paper committee reader, Telecommunications Policy Research Conference
- 2012 - 2013, Open Internet Advisory Committee, US Federal Communications Commission. http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0525/DA-12-829A1.pdf, Chair of working group on Economic Impacts.
- 2008 – 2012, Sub-editor, Economics and Business Department, *Communications of the Association of Computing Machinery*.
- 2008 – 2010, Co-Editor, *Information Economics and Policy*
- 2004 – 2007, Associate Editor, *Information Economics and Policy*.
- 2005 – 2010, Associate Editor, *Economics Bulletin*.
- 2009, Special issue on the 700 MHz auction” *Information Economics and Policy*.
- 2000 - 07, Editorial board, *Journal of Regulatory Economics*
- 2000 -2006, US Census Advisory Committee, American Economics Association representative.
- 2000 -02, Advisory Panel, Advanced Technology Program, National Institute of Standards and Technology, Department of Commerce.
- 2016, 2015, 2014, 2005, 2003, 2002, 2001, 2000, 1999, National Science Foundation, Review Panel.

Conference Organization

- 2011-present, Co-organizer (and Susan Athey, Erik Brynjolfsson, Hal Varian), NBER digitization conference, summer meetings, Cambridge.
- 2011-2019, Co-organizer, NBER digitization conference, winter meetings (and Scott Stern), and student tutorial (and Avi Goldfarb), Stanford.

- 2016-present, Digital Initiative Discussion and Symposium, Harvard Business School.
- 2019, Co-organizer (and Tim DeStefano), “Business and Policy Perspectives on Digital,” Harvard Business School and the Organization for Economic Cooperation and Development. November 4-5.
- 2017, Co-organizer (and Liran Einav and Scott Stern), “Bres-fest,” a celebration for Tim Bresnahan, Stanford.
- 2017, Co-organizers (and Peter DiCola and Pam Samuelson), Research Rountable on Economics of Mass Digitization: How to Advance More Public Access to In-Copyright Works? Searle Center on Law, Regulation and Economic Growth, Northwestern Law School.
- 2016, Co-organizer (and Josh Lerner and Scott Stern), NBER Innovation Policy and the Economy, Washington DC.
- 2011-14, Co-organizer, (with Peter Dicola), Research Roundtable on the Law and Economics of Digital Markets, Searle Center on Law, Regulation and Economic Growth, Northwestern Law School.
- 2014, April, Northwestern Host, International Industrial Organization Conference.
- 2008 - 11, Program committee, *International Industrial Organization Conference*.
- 2013, June, Co-organizer (and Avi Goldfarb and Catherine Tucker), Economics of Digitization, Conference, Park City, Utah.
- 2012, June, Co-organizer (and Avi Goldfarb and Catherine Tucker), Economics of Digitization, Pre-Conference, Chicago.
- 2006 – 2010, Board member, *Telecommunications Policy Research Conference*
- 2006, Planning committee, Workshop on Economics Systems Economics (WISE).
- 2004, Co-organizer, (with Victor Stango), Standards and Public Policy, Chicago Federal Reserve.
- 2003, Review Board, 5th International Conference on Electronic Commerce
- 2003, Organizer, NBER Productivity Workshop, Computers and Telecommunications.
- December 2000, Organizer, Illinois Telecommunications Symposium, Kellogg Graduate School of Management, Northwestern University.
- 1999-00, Program Committee & Chair, TPRC presents the 28th Annual Conference on "Communications, Internet and Policy."
- 2000, Organizer and host, CCC Doctoral Student Consortia.
- Summer 1999, Organizer, Computer Day, NBER Summer Institute, Productivity Workshop.
- December, 1997, Co-organizer (with Scott Stern), NBER, University Research Consortium, Competition and Organization in Technology-Intensive Industries, Cambridge, MA.
- April, 1997, Co-organizer, IGPA Regulatory Roundtable, Competition in Telecommunications and the Deregulation Bill: History, Expectations and Impact in Illinois, Union League Club, Chicago, IL.

Awards and Honors

- 2017, “References Wars.” Participant in symposium that received “Best Symposium Award” for ‘The Digital Frontier: How Digital Technologies Reconfigure Products, Organizations, and Fields.’” Academy of Management, OMT Division.
- 2017, Wyss Mentoring Award, Harvard Business School.
- 2016, Schumpeter Prize. Awarded for *How the Internet Became Commercial*.
- 2016, Master of Arts (honorary), Harvard University.
- 2015 – 18, Top Writer, Quora.
- 2015, Best Poster, 2105 Telecommunications Policy Research Conference.
- 2015, July, Keynote Speaker, ZEW Conference on the Economics of Information and Communication Technologies, Mannheim, Germany, and Torino, Italy.
- 2014, May, The Charles River Distinguished Seminar Speaker, Harvard Business School.
- 2013, Speaker, NBER China Meeting, co-hosted by the China Center for Economic Research at Peking University, and the Economics Department at Tsinghua University, Beijing, China. June.
- 2013, Keynote speaker, Workshop on Competition Policy and Regulation in Media and Telecommunications: Bridging Law and Economics, Tilburg University, the Netherlands, May 23-24.
- 2012, Best Paper Award, Workshop on Health IT and Economics, Center for Health Information and Decision Systems, University of Maryland, October 5-6.
- 2012, Plenary Speaker, Open and User Innovation, Cambridge, US, July 30-31.
- 2012, Keynote Speaker, ICT-NET conference, April, Imperial College, London, UK.
- 2012, Distinguished Public Service Award, Public Utility Research Center, University of Florida, February.
- 2011, Academic Consultant to the Federal Research Board of Governors, Network Economics and Financial Platforms, Washington D.C., October 7, 2011.
- 2011, Keynote Speaker, Western Washington University Lecture Series. May, 2011.
- 2011, Tulluck Lecture, George Mason University, School of Law, Arlington, VA, 4/7.
- 2010, Keynote speaker, ICT Conference Munich Economic Growth, November 6, University of Munich, Munich, Germany.
- 2009, *Journal of Urban Economics*, Highly Cited Author Award, 2004-08.
- 2009, 2011, Nominated, L.G. Lavengood Outstanding Professor of the Year Award. Kellogg School of Management.
- 2006, Keynote speaker at “The Information Society in Comparative Perspectives: The Americas and Europe,” in Buenos Aires, Argentina.
- 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.

Grants

- *2020-2022*, Catherine Tucker, co-PI, Alfred P. Sloan Foundation, "The Economics of Digitization," National Bureau of Economic Research.
- *2017-2019*, Josh Lerner and Scott Stern, co-PI, Alfred P. Sloan Foundation, "The Economics of Digitization," National Bureau of Economic Research.
- *2016-2017*, Shane Greenstein and Avi Goldfarb, co-PIs, National Science Foundation, Science of Science Policy, "Graduate Student Tutorial." National Bureau of Economic Research.
- *2015-2016*, Shane Greenstein and Avi Goldfarb, co-PIs, National Science Foundation, Science of Science Policy, "Graduate Student Tutorial." National Bureau of Economic Research.
- *2014-2015*, Shane Greenstein, PI, National Science Foundation, Science of Science Policy, "Graduate Student Tutorial and Winter Digitization Meetings," National Bureau of Economic Research.
- *2014-2016*, Josh Lerner and Scott Stern, co-PI, Alfred P. Sloan Foundation, "The Economics of Digitization," National Bureau of Economic Research.
- *2010-2013*, Josh Lerner and Scott Stern, co-PI, Alfred P. Sloan Foundation, "The Economics of Digitization," National Bureau of Economic Research.
- *2011*, Avi Goldfarb and Chris Forman, Co-PIs, "Broadband Supply, Local Capabilities, and Broadband Adoption by Community Anchor Institutions." National Telecommunications Information Administration.
- *2007-09*, Ewing Marion Kaufman Foundation, The Commercialization of Internet Infrastructure.
- *2007-08*, Kristina Steffensen McElheran, Co-PI, Productivity, Supply Chain Structure and Information Technology: Endogenous Information Technology Adoption by Firms. US Census Bureau, Statistical Fellowship.
- *Summer 2007*, Institute for Policy Research, Summer Grant for Undergraduate Research Experience

- *Summer/Fall 2007*, The Searle Foundation, *The Great Transition: The commercialization of the Internet.*
- *Summer 2006*, Kellogg Teaching cases: *The Crisis at Encyclopedia Britannica and Wikipedia in the Spotlight.*
- *Spring, 2004*, Victor Stango, Co-PI, Standards and Public Policy, Kellogg School of Management and Federal Reserve Bank of Chicago.
- *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 Spillovers 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.

Consulting Experience

- *June, 2014-April, 2015*, Special Economic Consultant to the Federal Communications Commission, Analysis of the proposed merger between Comcast and Time Warner Cable.
- *December, 2011*, Consultant to Research Institute of Economy Trade and Industry (REITI), Ministry of Economics Trade and Industry (METI), Tokyo, Japan. Issues in platforms and standardization.
- *Summer-Fall, 2009*, Conference Board, Accounting for the Contribution of Broadband to the Internet in Six Countries.
- *Winter, 2006*, Consultant for Lexecon Inc., Chicago Il., Issues in Internet governance.
- *Fall, 2002*, Bureau of Economic Analysis, Department of Commerce, 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., Issues in the regulation of telecommunications infrastructure.

Public Testimony

- United States House of Representatives, Committee on Energy and Commerce, Subcommittee on Communications, Technology and the Internet, "House J. Res. 37, Disapproving the Rule Submitted by the Federal Communications Commission with Respect to Regulating the Internet and Broadband Industry Practices." March 9, 2011.
- National Telecommunication Information Administration, Hearings on "Broadband Researchers' Data Workshop," June 3rd, 2010.
- Federal Communications Commission, Hearings on "Innovation, Investment, and the Open Internet," January 13th, 2010.
- National Telecommunication Information Administration, Hearings on "Broadband Data Transparency," October 30th, 2009.

- Federal Communications Commission, Hearings on “Economic Issues in Broadband Competition,” October 9th, 2009.
- Federal Communications Commission, Hearings on “Economic Growth, Job Creation, and Private Investment,” August 26th, 2009.
- NSF/OECD sponsored meeting on “Social and Economic Factors Shaping the Future of the Internet,” January 30th, 2007.
- Federal Trade Commission, Hearings on “Competition and Intellectual Property Law in the Knowledge-Based Economy,” February, 2002.

Doctoral Dissertation Committees at Harvard University

| <u>Name</u> | <u>Department</u> | <u>Year Complete</u> | <u>Duties</u> |
|--------------------------|--------------------------|-----------------------------|----------------------|
| A Jay Holmgren | KSG | ---- | Reading member |
| Nataliya Langburd Wright | Strategy | ---- | Reading member |
| Meitong Li | TOM | ---- | Reading member |
| Ran Zhou | Bus Econ | ---- | Reading member |
| Tommy Pan Fang | TOM | ---- | Reading member |
| Sam Lite | Bus Econ | 2021 | Reading member |
| Cirrus Foroughi | Strategy | 2020 | Reading member |
| James Sappenfield | TOM | 2020 | Principal |
| Yuan (Grace) Gu | TOM | 2020 | Reading member |
| Emily Mower | HKS | 2019 | Reading member |
| Ankur Chavda | TIES (Sloan, MIT) | 2019 | Reading member |
| Yosub Jung | Finance | 2019 | Reading member |
| Do Yoon Kim | Strategy | 2019 | Principal |
| Ohchan Kwon | TOM | 2019 | Principal |
| Wendy Bradley | HEC Strategy | 2018 | Outside reader |
| Mike Teodorescu | Strategy | 2018 | Co-Principal |
| Chris Poliquin | Strategy | 2018 | Co-Principal |
| Klaus Ackerman | Monash U, Econ | 2016 | Outside reader |
| Darren Stevenson | UMich, Information | 2016 | Outside reader |
| Frank Nagle | TOM | 2015 | Co-Principal |

Doctoral Dissertation Committees at Northwestern University

| | | | |
|-----------------|----------------|------|-------------------|
| Erik Hovenkamp | Economics | 2017 | Reading member |
| Erin Klawitter | Communications | 2016 | Reading member |
| Yasin Ozcan | M&S | 2015 | Principal |
| Laurina Zhang | U of Toronto | 2014 | External Examiner |
| Bingyang Li | M&S | 2014 | Reading member |
| Min Ren | M&S | 2014 | Reading member |
| Ivan Fau Rufa | Economics, ABD | 2014 | Reading member |
| Jingqui Wang | Operations | 2013 | Reading member |
| Marit Hinnosaar | Economics | 2013 | Reading member |
| Justin Ng | M&S | 2013 | Principal |

| | | | |
|---------------------|-------------------|------|-------------------|
| Matt Gunden | Economics, ABD | 2013 | Principal |
| Hojin Jung | Marketing | 2012 | Reading member |
| Junzhao Ma | Marketing | 2011 | Reading member |
| Jason O'Conner | Economics | 2010 | Reading member |
| Lei Wang | Marketing | 2010 | Reading member |
| John Laprise | Communications | 2009 | Reading member |
| Maxim Sytch | MORS | 2009 | Reading member |
| Kristina Steffenson | M&S | 2008 | Principal |
| Mian Dai | M&S | 2008 | Principal |
| Kirill Yurov | Info Systems, UIC | 2008 | Reading member |
| Yongbae Lee | Economics | 2008 | Reading member |
| Manish Tripathi | Marketing | 2008 | Reading member |
| Greg Stranger | M&S | 2007 | Principal |
| Viswanath Pingali | Economics | 2007 | Reading member |
| James Oldroyd | MORS | 2007 | Reading member |
| Yingshi Jin | Marketing, ABD | 2007 | Reading member |
| Allan Collar-Wexler | Economics | 2006 | Reading member |
| Doug Frank | M&S | 2006 | Reading member |
| Ambarish Chandra | Economics | 2006 | Reading member |
| Winai Wongserarat | 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 |
| Olaf Rieck | Commerce, UBC | 2000 | External Examiner |
| 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

Doctoral Dissertation Committees at the University of Illinois

| | | | |
|----------------------|-------------|------|----------------|
| Walter Sosa Escudero | Economics | 1997 | Principal |
| Mercedes Lizardo | Economics | 1997 | Principal |
| Tom Gift | Economics | 1997 | Reading member |
| Vernon Richardson | Accounting | 1997 | Reading member |
| C. Federico Basanes | Economics | 1996 | Reading member |
| Tom Nonnenmacher | Economics | 1996 | Reading member |
| Mike Carnall | Economics | 1996 | Reading member |
| Susan McMaster | Economics | 1995 | Principal |
| Ken Brown | Economics | 1994 | Principal |
| Teresa Kauf | Economics | 1994 | Reading member |
| Andy Kang | Accounting | 1994 | Reading member |
| Ji-Ren Lee | Bus. Admin. | 1994 | Reading member |
| Yongjae Choi | Economics | 1994 | Reading member |
| Eduardo Luzio | Economics | 1993 | Reading member |
| Jung-Kun Lee | Economics | 1990 | Reading member |

Supervision of Post-Doctoral Researchers, NBER

2019, Ruiqing Sam Cao
2017, Abhishek Nagaraj
2016, Daniel Gross
2015, Andrey Fradkin
2014, Imke Reimers
2013, Heekyung Hellen Kim
2012, Ben Shiller

Supervision of Independent Research, Harvard

Winter 2020, Sarkis Aghaian, MBA.
2019-2020, Angel Zhou, Undergraduate. Honors thesis.

Service to Harvard Business School

2018-present, Personnel Committee, Ad-hoc committees
2016 - 2020, Research Coach, Junior faculty seminar
2016, Alumni Webinar

Faculty Sponsor, visitors to Harvard Business School

2019, Gerald Kane
2017, Spring, Laura Gee, Roberto Fontana
2016, Fall, Ben Shiller

Supervision of Independent Research, Northwestern

Spring, 2013, Soheil Ghili, PhD.

Fall, Winter, 2011-2012. Charles Ha, Undergraduate. MMSS, Law&Economics, honors thesis.
Fall 2011, Jason Deck, TMP.
Summer, 2011, John Osborne, TMP.
Winter, Spring 2011, Benjamin Rothschild, Undergraduate, Economics, honors thesis.
Spring, 2010, Jordi Higuera, MBA.
Fall, Winter, Spring, 2010, Yasin Ozcan, PhD. Justin Ng., PhD.
Fall, 2010. Daniel Belcher, MBA.
Winter, Spring, 2009, Roxanne Luk, Undergraduate, Economics, honors thesis.
Winter, Spring, Fall, 2009, Yasin Ozcan, PhD.
Summer 2008, David Aronson, TMP.
Winter, Spring, 2008. Guy Arie, PhD.
Spring 2007, James Jacobsen, TMP.
Winter 2006, Mian Dai, MECS PhD candidate, Juliana Norbriega, MECS Masters candidate.
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, honors thesis.
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, MBA,
Fall 1998, Eric Berg, MBA,
Spring 1998, Kathleen Iriate, EMP,
Winter, 1998, Ned Rollhaus, MBA

Service to the Northwestern University

2002, 2004, 2011, 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 - 2003. Outside reviewer, Communications Department recruiting.

Service to the Kellogg Graduate School

2008-2010, 2013, (*ad hoc*), 2014, (*ad hoc*), Personnel Committee.
 2006-2008, Student Affairs Committee
 2005-2006, Stanley Reiter Award committee.
 2001- 2005, 2011 Research Computing Committee
 2001, 2002, Ad hoc curriculum review.

1999, 2000, 2001, 2005, 2007, 2010, 2011, 2012 Ad hoc personnel review committees.
1997-98, 2000-01, 2010-12 Information Technology Committee.

Executive Education

Part of M&S program: 2001-2009.
Half courses for Recanati, Tel-Aviv, 2002 - 2004.

Service to the Management and Strategy Department

2002-2005, Department Chair.
2000- 2002, Graduate Program co-coordinator.
2012, 2008, 1998-99, Junior Recruiting Committee
1997-98, 99-00 Recruiting Committee
2006-2013, Ad hoc department promotion committees.

Independent Study Students at the University of Illinois

1997, Paul Nash, Engineering
1997, Ed Jimenez, Business Administration
1996, Oliver Biege, Business Administration
1996, Steven Wu, Engineering and Economics
1995-96, J Gregory Parrish, Business Administration
1993, Howard Dick, Economics-Political Science
1993, Ian McPherson, Economics

Service to the Department at the University of Illinois

1996-97, Faculty Advisory Committee
1996-97, Faculty Development Committee
1996-97, Graduate Programs Committee
1996-97, Planning Committee
1996-97, Kinkead Recruiting Committee
1993-94, Steering Committee.
1990-91, 1992-93, 1996, Undergraduate Studies Committee.
1991-92, 1993, 1993-94, 1995-96, 1996-97, Coordinator, Industrial Organization/Ameritech
Regulation Workshop.

Service to the College at the University of Illinois

1997, College of Commerce Cyberfest Presentation Organizer.
1996-97, Executive Education Committee. 1992-93,
1993-94, Affirmative Action Committee.

Service to University of Illinois

1995-97, Partnership Illinois -- Technology Transfer Sector
1995-96, Faculty Friend, Wardall Hall.
1994-97, Campus Honors Faculty
1992-93, Faculty Friend, Allen Hall North 2.

Service to Professional Community: Outside Review of Programs

2016, MIT Sloan TIES Phd Program.

2019, Carnegie-Mellon University, Heinz School of Information and Public Policy.

Service to Professional Community: Outside Review and Promotion

Boston College, Boston University, Brandies University, Cambridge University, Carnegie-Mellon University, City College of New York, Columbia University, Cornell University, Duke University, Ecole Polytechnique Fédérale de Lausanne (EPFL), European School of Management and Technology, George Mason University, Georgetown University, Georgia Technology University, Harvard University, IDC – Herzliya, Imperial College London, Kansas State University, Katholieke Universiteit Leuven, London Business School, MacArthur Foundation, Massachusetts Institute of Technology, Monash University, National Bureau of Economic Research, Northeastern University, New York University, Occidental College, Oxford University, Penn State University, Purdue University, Rensselaer Polytechnic Institute, Royal Swedish Academy of Science, San Jose State University, Stanford University, SUNY – Queens College, SUNY – Stony Brook, Syracuse University, Tel Aviv University, Temple University, Texas A&M University, Tufts University, Universidad de Navarra, Université of Lausanne, University of Arizona, University of British Columbia, University of Calgary, University of California – Berkeley, University of California – Davis, University of California – Irvine, University of California – Los Angeles, University of California – Santa Cruz, University of California – San Diego, University of Central Florida, University of Colorado - Boulder, University of Illinois – Urbana/Champaign, University of Indiana – Bloomington, University of Kansas, University of Maryland, University of Michigan, University of Minnesota, University of Navarra, University of Nevada – Las Vegas, University of North Carolina – Chapel Hill, University of North Texas, University of Pennsylvania, University of Pittsburgh, University of Santa Clara, University of Southern California, University of Texas – Arlington, University of Texas – Austin, University of Toronto, University of Virginia, University of Wisconsin -- Madison, University of Zurich, Washington University – St. Louis, Wesleyan University, Yale University.

Service to Professional Community: Requests to Referee and Review

Academic Press, Academy of Management, Association for Computing Machinery (ACM) Books, ACM Transactions on Internet Technology, American Economics Review, American Economic Review Insights, Annals of the History of Computing, B.E. Journal of Economic Analysis and Policy, Brookings Institute, Bulletin of Economic Research, California Management Review, Canadian Journal of Economics, Econometrica, Economics of Innovation and New Technology, Economic Inquiry, Economics Letters, Economic Journal, Economie et Statistique, Education Finance and Policy, European Journal of Political Economy, European Research Council, European and Social Research Council, European Journal of Standardization, Explorations in Economic History, Federal Communications Commission, Federal Trade Commission, Finnish Academy of Sciences, Ford Foundation, Government Accounting Office, Harper-Collins Press, IEEE, IEEE Micro, Industrial and Corporate Change, Industrial and Labor Relations Review, Information and Culture: A Journal of History, Interfaces, International

Journal of Industrial Organization, International Journal of Innovation Management, International Journal of Technology Management, Israel Science Foundation, Journal of Behavior and Economics, Journal of Business, Journal of Corporate Finance, Journal of Econometrics, Journal of Economic Behavior and Organization, Journal of Economic Geography, Journal of Economic Growth, Journal of Economic History, Journal of Economics Dynamics and Control, 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, Journal of Urban Economics, Management Science, Managerial and Decision Economics, Law and Society Review, Marketing Science, MIT Press, National Academy of Engineering, National Research Council of the National Academy of Sciences, National Science Foundation, National Tax Journal, Netherlands Organization for Scientific Research, New York Census Research Data Center, NYUAD Research Enhancement Fund, Plos One, Public Policy Institute of California, Quarterly Journal of Business and Economics, Quarterly Journal of Economics, Quarterly Journal of Economics and Finance, Rand Journal of Economics, Regional Studies, Research Policy, Research in International Business and Finance, Review of Economics and Statistics, Review of Economic Studies, Review of Income and Wealth, Review of Network Economics, Russell Sage Foundation, Science Magazine, 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, Technological Forecasting and Social Change, 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, Bloomberg News, Boston Globe, Business Week, Chicago Tribune, Chicago Sun Times, Communications Daily, Computer World, Consumer Electronics, Crane's Chicago Business, Denver Post Editor & Publishing Magazine, Dow Jones Magazine, Fast Company, Financial Times, Forbes, Freedom Forum On Line, Harper's Magazine, Harvard Magazine, Harvard Gazette, International Herald Tribune, Los Angeles Times, New Orleans Times-Picayune, New York Review of Books, New York Post, New York Times, PC World, Reuters, San Jose Mercury News, Technology Review, The Economist, Time Magazine, Toronto Star, USA Today, US News and World Report, Wall Street Journal, Washington Post, Washington Times, Wired, World Business.

Internet Media: Bloomberg news, CNET News, Communications Daily, DSL Prime, Forbes ASAP, Freakeconomics Blog, Free Exchange, Law360, MarketPlace Tech Report (American Public Media), Newsle.com, PC World, Politico Pro, Radio for Change.com, Reuters, Slashdot.org, Tele.com, The Daily Dot, ZDNET news, Wired.com.

Radio appearances: CNET Radio news, MarketPlace, Missouri Public Radio, NBC Radio news, NPR *Morning Edition* and *All Things Considered*, Market Place, Planet Money, WAMU

The Kojo Nnamdi Show, WBEZ, Chicago Public Radio, *Odyssey with Gretchen Helfrich*, Gabriel Spitzer, 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, XM/Sirius – Kartik Hosanagar, [*The Digital Show*](#).

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 Media Featuring Quotes and Research:

- “Wikipedia at 20: The Other Tech Giant.” *The Economist*. <https://www.economist.com/international/2021/01/09/wikipedia-is-20-and-its-reputation-has-never-been-higher> Jan 9, 2021.
- “Google’s founders have vanished as the company goes to war with Washington. Its yet another mess for Sundar Pichai to clean up.” Business Insider. <https://www.businessinsider.com/larry-page-sergey-brin-smartest-move-a-perfectly-timed-disappearance-2020-10>. Oct 25, 2020.
- By Matt Thompson and Todd Buell, “Pandemic Vexes Debate on Digital Taxes, Unprofitable CoS,” Law360, <https://www.law360.com/publicpolicy/articles/1267226>
- Keith Griffith, “Google co-founder Larry Page was 'fed up' with entitled engineers, tried to get replaced as CEO for years because he hated mundane corporate tasks, and hadn't spoken in public for three years when he stepped down,” *The Daily Mail*, 5 December 2019, <https://www.dailymail.co.uk/news/article-7759983/Google-founder-Larry-Page-hadnt-spoken-public-three-years-stepped-down.html>
- By Jack Nicas, Conor Dougherty and Daisuke Wakabayashi, “How Google’s Founders Slowly Stepped Away From Their Company,” *New York Times*, December 4, 2019, <https://www.nytimes.com/2019/12/04/technology/google-larry-page-sergey-br.html>.
- Sheryl Tian Tong Lee, “China Races Ahead of the US in the Battle for 5G Supremacy,” *Bloomberg News*, August 1, 2019. <https://www.bloomberg.com/news/articles/2019-08-01/china-bets-on-5g-socialism-in-push-to-lead-global-tech-race>
- Steven Nelsen, Showdown looms as states resurrect net neutrality rules, *Washington Examiner*, <https://www.washingtonexaminer.com/policy/technology/showdown-looms-as-states-resurrect-net-neutrality-rules>, Sept 25, 2018.
- Joe Williams, How media mega-mergers may jack up your TV bill, even with cord cutting, <https://www.washingtonexaminer.com/business/how-media-mega-mergers-may-jack-up-your-tv-bill-even-with-cord-cutting>, June 26, 2018.
- J M Porup, Another Massive DDOS Internet Blackout Could be Coming Your Way, <https://www.csoonline.com/article/3258545/cyber-attacks-espionage/another-massive-ddos-internet-blackout-could-be-coming-your-way.html>, Feb 28, 2018.
- Stacey Vanek Smith, Forget Neutrality, NPR, Planet Money, December 15, 2017. <https://www.npr.org/templates/transcript/transcript.php?storyId=571176019>.
- Hickey, Alex, Net Neutrality vs Internet Freedom: A case for the Status Quo, CIO Dive, 12,13,2017, <https://www.ciodive.com/news/net-neutrality-vs-internet-freedom-a-case-for-the-status-quo/512929/>.
- Alexis Madrigal, Silicon Valley's Big Three vs. Detroit's Golden-Age Big Three, *The Atlantic*, <https://www.theatlantic.com/technology/archive/2017/05/silicon-valley-big-three/527838/>, May 24, 2017.
- Ananya Bhattacharya, Quartz.com, Wikipedia is not as Biased as you Might Think, <http://qz.com/820251/wikipedias-best-articles-are-as-neutral-as-the-encyclopedia-britannica-researchers-have-found/>. 11/6/2016.

- Jeff Guo, Washington Post, <https://www.washingtonpost.com/news/wonk/wp/2016/10/25/somethings-terribly-wrong-with-the-internet-and-wikipedia-might-be-able-to-fix-it/>, Wikipedia is fixing one of the Internet’s biggest flaws. 10/25/2016.
- Larry Downes, Washington Post, <https://www.washingtonpost.com/news/innovations/wp/2016/10/24/google-and-facebook-contribute-zero-economic-value-thats-a-big-problem-for-trade/>, Google and Facebook Contribute Zero Economic Value. That’s a big Problem for Trade. Oct 24, 2016.
- Robert Gebelhoff, Washington Post, https://www.washingtonpost.com/news/in-theory/wp/2016/10/19/science-shows-wikipedia-is-the-best-part-of-the-internet/?utm_term=.a5daa3d53dcf, “Science Shows Wikipedia is the Best Part of the Internet.” October 19, 2016.
- Drake Baer, New York Magazine, <http://nymag.com/scienceofus/2016/07/more-money-less-internet.html>, “The more money you make, the less time you spend online.” July 20, 2016.
- Myles Udland, Business Insider, <http://www.businessinsider.com/internet-habits-are-bad-news-for-digital-media-2016-7>, “Consumers have a troubling internet habit that is threatening digital media, July 19, 2016.
- Allee Manning, Vocativ, <http://www.vocativ.com/342037/richer-people-spend-less-time-on-the-internet/>, “Richer people spend less time on the internet.” July 19, 2016
- Christina Pazzanese, Harvard Gazette, http://news.harvard.edu/gazette/story/2016/05/creative-differences/?utm_medium=social&utm_campaign=hks-twitter&utm_source=twitter, June, 2016.

Reviews of “How the Internet Became Commercial”

- <http://reason.com/archives/2016/06/11/how-privatization-and-competition-freed>, How Privatization and Competition Freed the Web and Made the Modern World Possible, Reason.com, Free minds and free markets. June 11, 2016. By Milton Mueller.
- Walter Frick, <https://hbr.org/2016/06/who-controls-the-internet>, Who Controls the Internet, *Harvard Business Review*, June, 2016.
- <http://ijoc.org/index.php/ijoc/article/view/5431/1606>, International Journal of Communication 10(2016), Book Review 1552–1554. By Jonathan Aronson.
- http://www.philly.com/philly/entertainment/20160221_How_Internet_Became_Commercial_Enlightened_competition_-_and_regulation.html, Philadelphia Inquirer, February 22, 2016.
- <http://dailyorange.com/2016/02/what-a-harvard-business-professor-said-about-the-internet-during-a-lecture-at-su/> The Daily Orange, 2/16/16, by Kathryn Krawczyk.
- <https://www.foreignaffairs.com/reviews/capsule-review/2016-02-16/how-internet-became-commercial-innovation-privatization-and-birth>, March/April Issue, *Foreign Affairs*, Reviewed by Richard N. Cooper.
- <http://www.economicprincipals.com/>, Will “innovation from the edge” help with global warming? 11/29. David Warsh.
- <http://www.wsj.com/articles/privatizing-the-superhighway-1448325429>, Wall Street Journal.
- <http://www.bizedmagazine.com/archives/2015/6/research/books/>
- <http://marginalrevolution.com/marginalrevolution/2015/10/how-the-internet-became-commercial.html>, By Tyler Cowen
- <https://www.kirkusreviews.com/book-reviews/shane-greenstein/how-the-internet-became-commercial/>, Kirkus.

More Selected Examples of Media Featuring Quotes and Research:

- Richard Florida, “San Francisco’s Increasing Dominance over US Innovation.” <http://www.citylab.com/tech/2016/05/san-franciscos-increasing-dominance-over-us-innovation/484199/>, The Atlantic, CityLab, May 25, 2015.
- The Native Society, <http://thenativesociety.com/nativeadmission/2016/1/23/shane-greenstein->

- [author-mba-class-of-1957-professor-of-busin.html](#), January 23, 2016.
- Adrienne LaFrance, “When will the Internet be cheaper?” The Atlantic, <http://www.theatlantic.com/technology/archive/2015/09/when-will-internet-fees-go-the-way-of-long-distance-phone-calls/405235/> September 14, 2015.
 - Tim Appel, “50 Million Users: The Making of an Angry Internet Meme,” Wall Street Journal, Real Time Economics, <http://blogs.wsj.com/economics/2015/03/20/50-million-users-the-making-of-an-angry-birds-internet-meme/>.
 - The Economist, “Pardon the Disruption, When firms succumb to new forms of competition, inflexible organization is usually to blame,” <http://www.economist.com/news/finance-and-economics/21615587-when-firms-succumb-new-forms-competition-inflexible-organisation-usually>, September 4, 2014. Free Exchange, page 78.
 - Sean Silverthorne, Forbes, “Scholars Crowd up to Study Wisdom of the Crowds,” <http://www.forbes.com/sites/hbsworkingknowledge/2014/07/31/scholars-crowd-up-to-study-wisdom-of-crowds/>, July, 30, 2014
 - Peter Marsh, Financial Times, “[The world struggles to keep up with the pace of change in science and technology](#),” June 18, 2014.
 - Zoe Chace, Jacob Goldstein, National Public Radio, Planet Money, April 4, 2014, “The Last Mile,” <http://www.npr.org/player/v2/mediaPlayer.html?action=1&t=1&islist=false&id=299060527&m=299231431>.
 - Zoe Chace, National Public Radio, Planet Money, March 27, 2014, “Netflix hit Spurs Talks over who pays for Internet Service Upgrades,” <http://www.npr.org/2014/03/27/295144689/netflix-hit-spurs-talks-over-who-pay-for-internet-service-upgrades>
 - The Washington Times, October 21, 2013, “Click Capitalism: PR firms cash in cleaning up client’s Wikipedia pages,” by Shaun Waterman. <http://www.washingtontimes.com/news/2013/oct/21/money-to-pr-firm-can-buy-good-image-on-wikipedia/>
 - The New York Times, August 18, 2013, “Is Big Data an Economic Big Dud?” By James Glanz, <http://www.nytimes.com/2013/08/18/sunday-review/is-big-data-an-economic-big-dud.html?pagewanted=1&r=0&hp>.
 - Communications Daily, July 10, 2013, “Members of FCC’s Open Internet Advisory Committee Question Role They Were Assigned by Agency,” <http://www.warren-news.com/telecomservices.htm>.
 - The Economist, March 7, 2013, by Greg Ip, “Net Benefits. How to Quantify the Gains that the Internet has Brought to Consumers.” <http://www.economist.com/news/finance-and-economics/21573091-how-quantify-gains-internet-has-brought-consumers-net-benefits>.
 - New York Post, February 8, 2013, by Garrett Sloane, “Scroogle you, Pal: Microsoft ads now bad-mouthing Gmail on Privacy,” http://www.nypost.com/p/news/business/scroogle_you_pal_JIhREceuRretidi0MfN314O.
 - Financial Times, January 4, 2013, by Linda Anderson, “Something for the Weekend,” <http://www.ft.com/intl/cms/s/2/d08bcfa4-4a01-11e2-a7b1-00144feab49a.html#axzz2H17Xfiou>
 - September, 2012, Harpers Index. *Harpers Magazine*.
 - Wonkblog, by Ezra Klein, Washington Post, 6/18/12, “Study: Wikipedia perpetuates political bias,” http://www.washingtonpost.com/blogs/ezra-klein/post/study-wikipedia-perpetuates-political-bias/2012/06/18/gJQAaA31IV_blog.html
 - MarketPlace Tech Report, American Public Media, June 15, 2012, “Coming soon: .beer, .love, and even .unicorn,” <http://www.marketplace.org/topics/tech/coming-soon-beer-love-and-even-unicorn>.
 - Computerworld, May 4, 2012, “OECD rates NZ highly on broadband economy benefit,” <http://computerworld.co.nz/news.nsf/news/oecd-rates-nz-highly-on-broadband-economy-benefit>, by Stephen Bell.
 - Wired, Epicenter. March 14, 2012, “Wikipedia Didn’t Kill Britannica. Windows Did.”

- <http://www.wired.com/epicenter/2012/03/wikipedia-didnt-kill-brittanica-windows-did/>, by Tim Carmody.
- US News and World Report, March 7, 2012, “Why the New iPad Features Don't Really Matter,” <http://www.usnews.com/news/articles/2012/03/07/why-the-new-ipad-features-dont-really-matter>, by Danielle, Kurtzleben
 - Wikimedia Research Newsletter, “Language analysis finds Wikipedia's political bias moving from left to right,” First written by Tilman Bayer, Volume 2(1), <https://meta.wikimedia.org/wiki/Research:Newsletter/2012-01-30>, first appeared February 4, 2012.
 - Financial Times, 1/23/12, “Online piracy causes rift between media and technology,” by David Gelles, <http://www.ft.com/intl/cms/s/2/271469a2-45ea-11e1-acc9-00144feabdc0.html#ixzz1kJS95u00>
 - Fast Company, 10/31/11, “We Want To Be The Pandora Of Learning” by David Zax, <http://www.fastcompany.com/1792089/we-want-to-be-the-pandora-of-learning>.
 - MarketPlace, American Public Media, 10/28/11, “Colleges Bid for NYC Space,” <http://marketplace.publicradio.org/display/web/2011/10/28/am-colleges-bid-for-nyc-space/>, By Sally Herships,
 - New York Times, 9/13/11, “U.S. Spending Billions on Rural Jobs, but Impact is Uncertain.” By Ron Nixon, <http://www.nytimes.com/2011/09/13/us/13rural.html>
 - Technology Review, 8/2/11, “Is your Internet connection as fast as you think it is?” by Kenrick Vezina, <http://www.technologyreview.com/web/38228/?p1=A3>
 - USA Today, 7/19/11, “QR Codes Everywhere – Even on Grave Markers,” by Laura Ruane. http://www.usatoday.com/tech/news/2011-07-19-qr-codes-smartphones_n.htm?csp=34news
 - Bloomberg News, 5/5/11, “Prostate Exam Deaths from Superbugs Spur Inquiry Into Cancer Tests,” <http://www.bloomberg.com/news/2011-05-05/prostate-exam-deaths-tied-to-superbug-ills-spur-cancer-test-inquiries.html>, by Jason Gale.
 - USA Today, 4/21/11, “Tech jobs boom like its 1999,” by Jon Schwartz, <http://www.usatoday.com/tech/news/2011-04-20-tech-jobs-booming.htm>
 - DSLPrime, 4/11/11, <http://www.fastnetnews.com/dslprime/42-d/4243-qhonest-policy-wonksq-prevented-net-monopolies>, by David Burstein.
 - The Economist, Free Exchange, “The Internet didn’t Eliminate Distance,” 3/15/11, http://www.economist.com/blogs/freeexchange/2011/03/technology_0
 - Wall Street Journal, 3/14/11, “The Internet and Inequality. More complicated than we thought?” Christopher Shea, http://blogs.wsj.com/ideas-market/2011/03/14/the-internet-and-inequality-more-complicated-than-we-thought/?mod=google_news_blog
 - Politico Pro, 3/8/11, “Sneak Peak: Net Neutrality testimony,” by Eliza Krigman, <https://www.politicopro.com/story/tech/?id=1809>
 - New York Times, 3/7/11, “So Far Rivals Can’t Beat iPad’s Price,” by Jenna Wortham, http://www.nytimes.com/2011/03/07/technology/07tablet.html?_r=1
 - Washington Post, 2/18/11, “Survey of Online Access Finds Digital Divide,” by Cecilia Kang. <http://www.washingtonpost.com/wp-dyn/content/article/2011/02/17/AR2011021707234.html?nav=emailpage>.
 - Financial Times, 1/15/11, “Will the iPad Flatten us All?” by Gillian Tett. <http://www.ft.com/>.
 - Slashdot, 9/14/10, “Why Broadband Prices Haven’t Decreased,” <http://news.slashdot.org/article.pl?sid=10/09/14/1516238>, (received 335 comments, as of 9/21/20).
 - New York Times, 8/10/10, “Hewlett took a PR Firm’s Advice in the Hurd Case,” by Ashlee Vance and Matt Richtel, <http://www.nytimes.com/2010/08/10/technology/10hp.html?scp=4&sq=hewlett%20packard&st=cse>
 - Technology Review, July/August, 2010, “America’s Broadband Dilemma. Can the FCC bring access to everyone in the country and achieve world-leading speeds at the same time?” by Bobbie Johnson, <http://www.technologyreview.com/communications/25573/?a=f>

- Chicago Tonight, 4/27/10, "Net Neutrality," Interview by Phil Ponce, Archived here: <http://virulentwordofmouse.wordpress.com/2010/05/02/tv-soundbites-and-net-neutrality/>
- Financial Times, 9/17/09, "The Broadband Numbers Racket," by Thomas Hazlett. <http://www.ft.com/cms/s/7005b0f4-a3c5-11d9-9fed-00144feabdc0>.
- New York Times, 8/8/09, "Are the Glory Days Long Gone for IT?" by Randall Stross, <http://www.nytimes.com/2009/08/09/business/09digi.html>.
- National Journal, Tech Daily Dose, 4/6/09, "High-Tech Hit Hard by Unemployment," <http://techdailydose.nationaljournal.com/2009/04/hightech-hit-hard-by-unemploym.php>, by Winter Casey.
- New York Times, 3/30/09, "Microsoft Encarta Dies After Long Battle With Wikipedia," <http://bits.blogs.nytimes.com/2009/03/30/microsoft-encarta-dies-after-long-battle-with-wikipedia/>, by Noam Cohen.
- National Public Radio, 2/16/09, "Stimulus Stirs Debate Over Rural Broadband Access," <http://www.npr.org/templates/story/story.php?storyId=100739283>, By Howard Berkes.
- DSL Prime, DOCSIS Report, Fiber News, 2/6/09, "[Broadband Job Claims "Gross Overstatement,"](#)" <http://www.fastnetnews.com/policy>, by Dave Burstein.
- Reuters, 1/30/09, "Broadband link to U.S. Jobs Exaggerated: Experts." <http://uk.reuters.com/article/technologyNews/idUKTRE50T6IP20090130?pageNumber=2&virtualBrandChannel=0&sp=true>, By Kim Dixon.
- Popular Science, 9/18/08, "When did the Internet get so damn pricey?" by [Tom Conlon](#), <http://www.popsoci.com/grouse/article/2008-09/world-wide-ripoff>.
- Business Week, 9/19/08, "Bringing Broadband to Rural America," by Arik Hesseldahl, http://www.businessweek.com/technology/content/sep2008/tc20080917_797892.htm
- Business Week, 7/17/08, "Recession Proof Jobs," by Albert Sun, http://www.businessweek.com/technology/content/jul2008/tc20080717_842379.htm?chan=top+news_top+news+index_technology
- PC World, 6/20/08, "Ozzie is key to Microsoft's success against Google," by Elizabeth Montalbano. Widely quoted on the Internet.
- Sloan Management Review, Winter, 2008, "The Benefits of City Locations," by Larry Yu.
- Chicago Tribune, 10/6/06, "Lawmakers seek delay in AT&T ruling," By Jon Van.
- economicprincipals.com, 6/25/06, "The Best Economics Columnist you Never Heard of." By David Warsh. <http://www.economicprincipals.com/issues/06.06.25.html>.
- Associated Press, 4/16/06, "IBM Faces Impatience Despite Retooling," by Brian Bergstein
- 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 Singhania.
- Reuters Press, 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: Cycer-sales Taxes Loom."by Anush Yegyazarian
- 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.
- PC World, 1/21/99, "ISPs Worried About Baby Bells," by Daniel Rubin
- 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.