Testimony
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the United States House of Representatives
Committee on Energy and Commerce
at its hearing on
Competition in the Communications Marketplace:
How Technology Is Changing the Structure of the Industry
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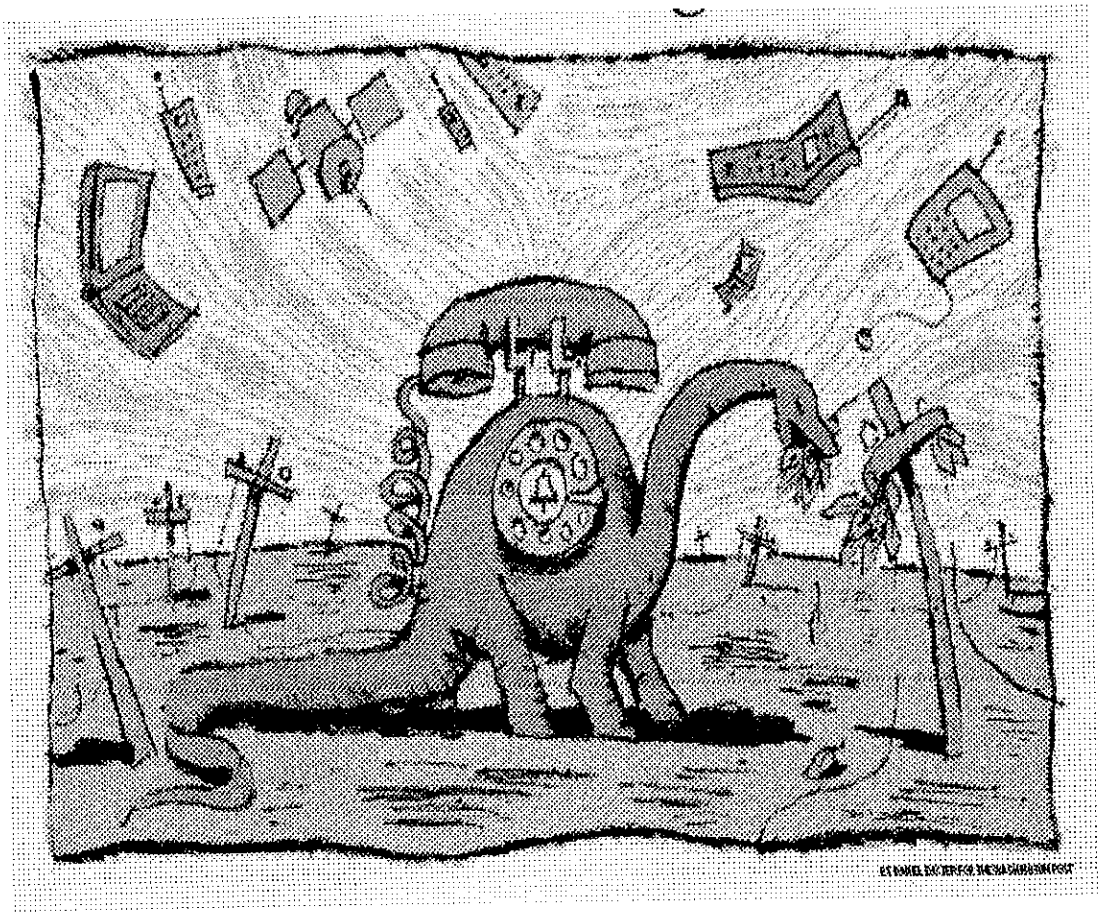
Summary of Testimony

My testimony today focuses on one central point illustrated by the attached graphic: the most important role for telecommunications regulation and antitrust law is to facilitate innovation and entry in the information industries. Historically, technological change in these industries has not come from the established players, even when those players invented the breakthrough technologies. For the Bell System, for example, installing fiber optic technology would have required abandoning its legacy network and thus was an unattractive option. Thus, significant innovations often come from scrappy upstarts like MCI (which installed fiber optics before Bell), Vonage (which rolled out Voice over the Internet services before the traditional carriers) or Tivo (which developed digital video recorders). In most cases, the incumbents respond to such innovations, thereby giving a double benefit to consumers.

The role of regulation during a period of great technological change should not be to pick winners or losers, but rather to identify possible market failures and ensure that today's monopoly power does not prevent innovations from taking root. Unfortunately, much of today's telecommunications regulation is not focused on this goal; rather, it often flows from antiquated statutory distinctions that attempt to preserve old technological categories—like the difference between local and long distance calls or broadband networks operated by telephone companies as opposed to cable companies.

Today's regulatory regime also is fundamentally flawed in that it does not focus intently on the need to promote additional broadband platforms. For most consumers, the choice for broadband is limited to the cable provider's cable modem service or the telephone company's DSL connection. In short, the best opportunity for an additional broadband platform lies in freeing up more wireless spectrum for both licensed and unlicensed providers so that they can roll out new services.

Today's mergers are a reaction by certain large companies to a changing telecommunications marketplace. In response to them, the critical role of telecommunications regulation and antitrust policy should be to ensure that such companies are not in a position to limit technological progress. Moreover, it is important not only that regulation guard against any market failures or abuse of market power, but also that it enable such large companies to respond in the marketplace to innovations ranging from new wireless services to cheaper access to broadband to new versions of voice-over-Internet offerings.



Mr. Chairman and members of the Committee, thank you for the opportunity to speak with you today. Since working in the Justice Department's Antitrust Division from 1996-1998 as a senior counsel, I have observed, taught, and written about telecommunications policy. Most recently, I have co-authored the book *Digital Crossroads: American Telecommunications Policy in the Internet Age* (MIT Press) (with Jonathan Nuechterlein). I also have founded and serve as the Executive Director of the Silicon Flatirons Telecommunications Program, which holds regular conferences and seminars on cutting edge topics in technology policy, including the recent conference on "Rewriting the Telecom Act." Finally, I am involved in the Progress and Freedom Foundation's Digital Age Communication Act project, which is developing a set of recommendations for Congress to consider in its deliberations over telecommunications policy.

Today's topic is a very timely one, as it focuses on the main challenges of telecommunications policy: keeping up with technological changes as well as facilitating innovation. In my remarks, I will explain how competition and innovation have reshaped the telecommunications industry and how regulation can continue to facilitate competition and innovation in the future. In short, my bottom line is that the principal benefit of promoting competition is to facilitate innovation that challenges today's incumbents. Historically, both telecommunications policy and antitrust policy have promoted that objective to great effect and they should continue to do so.

The Essential Rationale for Competition

In the midst of a number of high profile mergers that some claim are the effort to put Ma Bell back together, many consumers are asking whether the basic rationale of the 1996 Act—to facilitate competition and innovation in telecommunications—was sound. My answer is that the essential logic of the Act was sound, even if a number of its particular tactics and statutory provisions have proved flawed.

To appreciate the power of competition, let me highlight one of the often under-appreciated aspects of the original antitrust case against AT&T. In general, commentators often underscore the cost savings that consumers enjoyed in long distance service as a result of the break-up. But equally important was the boom that the break-up provided to innovation in general and for the Internet in particular.

In the late 1970s, Dow Corning began developing fiber optic technology and approached AT&T about installing this innovation in its long haul network. In response, AT&T replied that it would be thirty years before it installed fiber into its network and when it did, it would develop the technology itself. Thus, if AT&T still maintained its monopoly grip on telecommunications, as it had in the 1970s, consumers would probably still be waiting for the deployment of fiber optic technology.

Almost immediately after the AT&T break-up guaranteed long distance competitors equal access to local telephone lines, both MCI and Sprint announced plans

to deploy fiber optic long haul networks. And after Sprint began advertising that consumers could hear a pin drop on its network, AT&T wrote off its undepreciated long-haul assets and invested in its own fiber optic network.

In terms of the Internet, AT&T evinced an attitude similar to its approach to fiber optic technology. In a famous rebuff of the Defense Department's request that it operate the Internet backbone, an AT&T executive replied that "it can't possibly work, and if it did, damned if we are going to allow the creation of a competitor to ourselves."[1] Consequently, the Internet developed in spite of AT&T and without its assistance, leaving both MCI and Sprint to play important roles in its development.

Finally, the development of the market for telecommunications equipment provides yet another powerful reminder of how facilitating entry and innovation can pay huge dividends to consumers. After the FCC finally rejected the AT&T's stalling tactics to enable equipment to attach to the telephone network, rival manufacturers of a number of products from cordless telephones to fax machines to computer modems entered the market and brought a vast array of benefits to consumers.

Digital Disruption

The principal oversight of those who criticize the Telecom Act as failing to produce benefits in the local telephone market is that they have defined success in telecommunications policy too narrowly. On a narrow definition that fails to appreciate the benefits of innovation, even the AT&T break-up can be judged a failure. After all, some consumers, like my grandmother, continued to rent her telephone from AT&T and did not change long distance providers. Unfortunately, for consumers who are unable to take advantage of technological progress, deregulatory policies will often present greater hassles and confusion than benefits.

The continuing pro-competitive agenda in telecommunications policy has facilitated new technologies that have spurred significant consumer benefits. In telecommunications, the greatest consumer benefits have emerged in the long distance, wireless, and Internet-related markets—a number of which have challenged and have caused the prices of traditional telecommunications products and services to fall. Commenting on this trend, Qwest CEO Richard Notebaert put it succinctly: "[t]he voice industry—whether long distance, local or wireless—finds itself in a commodity market with deflationary pricing. Volumes will rise, but prices will fall even faster."[2]

Like the long distance example outlined above, the increased competition in wireless telecommunications markets provides consumers with significant benefits. In the late 1990s, wireless providers began offering packages of bundled minutes that did not distinguish between local and long distance services, leading consumers to increasingly rely on their cellphones for long distance calls. More recently, Sprint has enlisted an array of resellers—whom it invites to use its network on a wholesale basis—

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[1] JOHN NAUGHTON, A BRIEF HISTORY OF THE FUTURE 107 (2000).
[2] Scott Woolley, *Into Thin Air*, FORBES (April 26, 2004) (http://forbes.com/forbes/2004/0426/098_print.html).

to use a variety of marketing techniques to lure new subscribers to its network. Of particular note is Virgin Mobile, which is a so-called "Virtual Mobile Network Operator" and has used a creative marketing approach and reliance on pre-paid services to lure many first-time cellphone subscribers onto Sprint's network.

The most fundamental force transforming telecommunications today is the increasing shift of the entire system of communications toward the Internet.[3] Initially developed as an academic curiosity, the Internet is increasingly the Pac-Man of telecommunications: gobbling up everything in its path. Part of why the Internet is such a disruptive force in telecommunications is that data traffic provides consumers far more value for the bit than traditional voice traffic. Thus, when a consumer signs up for a broadband connection, they will increasingly use email instead fax or instant messaging instead of telephone calls. More particularly, when consumers sign up for a voice over the Internet service—such as those provided by Vonage and, increasingly, the cable companies—they can actually make telephone voice calls at a far cheaper rate than they can with their traditional service providers.

The Role for Telecommunications Policy

Some argue that in a world of "creative destruction" and increasingly dynamic technological change, there is no role for telecommunications regulation. To be sure, there is no useful role for a telecommunications policy that distinguishes between local and long distance calls; data and voice traffic; or cable companies and telephone companies that provide broadband Internet access. In short, the statutory silos of the 1996 Act continue to impede sound communications policy and must be discarded for a more holistic view of the marketplace as it is being re-shaped around the Internet.

In terms of the principal role for a new policy framework, its key objective should be to address important concerns about supporting rival service providers and ensuring that innovation and entry are not stalled or deterred by incumbent providers. Moreover, it can also be crafted to achieve certain social policy goals—such as supporting universal service—but those goals should be advanced in a manner that does not distort efficient entry and innovation.

The recent spate of mergers is causing some to ask at what point consumers should worry about losing the benefits that comes from rivalry between different service providers. In short, Chairman Powell eloquently answered this question in explaining "[m]agical things happen in competitive markets when there are at least three viable, facilities-based competitors."[4] In the wireless market, for example, the merger of Sprint and Nextel would leave consumers with four rival national service providers, almost assuredly still providing this "magical rivalry." In continuing to provide such rivalry, we

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[3] By "the Internet," I mean Internet technology generally (including private or managed IP networks) and not simply the "public Internet" in particular.

[4] Michael K. Powell, Remarks at the Wireless Communications Association International 1 (June 3, 2004) (http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-248003A1.pdf).

can expect Sprint to continue its practice of affording outside innovators—such as Virgin Mobile—access to its network.

In the case of broadband platforms, the Holy Grail remains spurring additional competition in this important market. The most promising opportunity for additional entry is through the use of wireless spectrum, such as either next generation mobile services (the so-called 3G offerings) or fixed wireless services such as the much touted Wi-Max standard. At this point, we are still a long way away from knowing whether these new technologies will succeed. Among other challenges, it is critical that the FCC and Congress press ahead in reforming the legacy regulation of wireless spectrum to ensure that more opportunities for both licensed and unlicensed spectrum are available to those who are developing new wireless technologies.[5]

In the current broadband environment, where cable companies and telephone companies are the primary service providers, there is an important role for telecommunications policy to ensure that all application and content providers are able to enjoy non-discriminatory access to broadband platforms. In terms of appreciating the role of outside innovation, it is important to recall, as Andrew Odlyzko observes, that "[i]n spite of many attempts, the established service providers and their suppliers have an abysmal record in innovation in user services . . . . The real 'killer apps,' such as email, the Web, browsers, search engines, [instant messaging], and Napster, have all come from users."[6]

The role for regulation to ensure continued access to broadband networks does not necessarily mean a heavy-handed approach to ensuring access to broadband networks. Rather, as Chairman Powell's Net Freedom initiative underscores, policymakers can announce the forms of protection they advocate and await any departures from it before taking action.[7] If there are any attempts to discriminate against or block rival services, it is critical that the FCC not tolerate those that lack a legitimate business purpose (such as those related to reasonable network management).[8]

The FCC's legal authority to regulate broadband platforms is under great strain and a set of currently litigated cases (namely, the *Brand X* case now at the Supreme Court and the Broadcast Flag litigation at the D.C. Circuit) will test whether its regulatory authority holds up. In particular, (1) if the FCC is not able to use its "ancillary

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[5] For the Report from the FCC Spectrum Policy Task Force, see http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-228542A1.pdf. For Chairman Powell's explanation of its this initiative, see Michael K. Powell, "Broadband Migration III: New Directions in Wireless Policy, Remarks at the Silicon Flatirons Telecommunications Program, University of Colorado at Boulder, October 30, 2002 (http://www.fcc.gov/Speeches/Powell/2002/spmkp212.html).

[6] Andrew Odlyzko, Telecom Dogma and Spectrum Allocations 7 (June 20, 2004) (http://wirelessunleashed.com/papers/TelecomDogmas.pdf).

[7] *See* Michael K. Powell, Preserving Internet Freedom: Guiding Principles for the Industry, Remarks at the Silicon Flatirons Telecommunications Program, University of Colorado at Boulder, February 8, 2004 (http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-243556A1.pdf).

[8] For my suggestion as to how the FCC could do this, see Philip J. Weiser, *Toward a Next Generation Regulatory Strategy*, 35 LOY. U. CHI. L.J. 41, 66 (2003) (http://www.luc.edu/law/activities/opportunities/docs/weiser_revised_II.pdf).

jurisdiction" to regulate broadband; or (2) if it is afforded only limited authority under that doctrine, its ability to regulate broadband platforms effectively will be greatly compromised. In short, if the FCC loses on either score in court, Congress will almost assuredly have to remedy the matter by providing the FCC with sufficient and appropriate authority to regulate broadband markets.

The Role for Antitrust Policy

The challenge of reviewing mergers that emerge out of a deregulatory environment is one of the most difficult jobs assigned to antitrust authorities. In many cases, antitrust authorities will not have a prior baseline to examine in assessing whether a particular merger would truly restrain competition. At the same time, the artificial market structures that emerged from a regulated era may well mean that certain combinations will produce more efficient operations. Balancing the expected competitive harms and benefits is the mainstay of antitrust analysis and the authorities' access to a variety of documents, business plans, and experts enable them to make the best informed judgments they can.

My respect for the fact-intensive nature of the merger review process makes me reluctant to offer too many observations about any specific merger that will undergo such a careful scrutiny. Nonetheless, in the case of two major pending long distance-Bell mergers, I will offer two preliminary observations that will be, I suspect, a starting point for the relevant antitrust reviews.

First, it is very important for policymakers to get past the "emotional logic" against a merger of AT&T (or MCI) and a Bell company. Notably, AT&T and MCI were the firms who were supposed to be the main competition to the Bell companies and thus a merger between them strikes many as antithetical to the goals of the Telecom Act. This "supposed to," however, is increasingly at odds with reality, as AT&T and MCI's base of long distance customers is eroding and their future is increasingly cloudy. To be sure, one could imagine a recent history in which AT&T (or MCI) emerged as a far more formidable and important competitive force than it is today. But due to a series of unfortunate circumstances (ranging from Worldcom's accounting fraud to AT&T's overpaying for its cable assets), events did not turn out that way.

Second, in examining the real areas of overlap between the long distance and Bell companies, the one that is likely to attract the most scrutiny is where the companies own competitive assets that would go to waste if combined into a single firm. In particular, I am confident that the antitrust authorities will take a close look at the fiber networks that MCI and AT&T purchased over the last ten years to compete directly with the Bell companies for big business customers. At the height of the boom, both AT&T and MCI (then Worldcom) paid billions of dollars for companies specializing in local access networks; whether those assets can and should be divested are likely to be a main area for antitrust authorities to scrutinize carefully on a market-by-market basis. Although I raise this as a concern, I recognize that this issue requires a careful fact-specific inquiry and thus I am not in a position to judge how antitrust authorities should address this issue.

The Role for Congress

The Telecommunications Act of 1996 is unquestionably broken. It was designed primarily to address the expected entry of the Bell companies into long distance and the long distance companies into the local Bells' markets. It did not anticipate the rise of the broadband Internet or even the increased importance of wireless services. Almost ten years later, it is quite clear that broadband and wireless services are increasingly defining the challenges of telecommunications policy. In many important respects, the recent mergers are both a recognition of and response to this reality.

In evaluating any possible revisions to the 1996 Act, Congress should be careful not to codify a particular technology or vision of competition into law. Similarly, Congress should be succinct in drafting the relevant statutory provisions and thus avoid the risk of providing self-contradictory instructions to the FCC. In providing self-contradictory and vague instructions to the FCC in the 1996 Act, Congress set the stage for an array of litigation that undermined many of the Act's goals and left a legacy of legal uncertainty.

To be more specific, Congress should seek to transition away from a number of policies that are in tension with the current realities of the telecommunications marketplace. In particular, the rules governing both the hand-off of traffic between different networks (the matter of "intercarrier compensation") and universal service support for subsidized telephone service are increasingly out-of-date and a hindrance to efficient competition. Similarly, ensuring the most effective use of spectrum—including allowing some users (such as UHF broadcasters) to sell to others (say, wireless broadband providers)—should be a very high priority for Congress and the FCC. Finally, Congress should evaluate how best to reform the FCC itself so that it can carry out a mission very different from the one it was designed to perform.[9]

Conclusion

The anxiety over the developments in the telecommunications marketplace is understandable and can be constructive if it helps to frame the appropriate policy debate. That debate should not center on what some may have expected to happen or what some wished would happen in the wake of the 1996 Act. Rather, it should focus on the realities of the telecommunications marketplace and ask how regulation can continue to facilitate entry, technological change, and innovation.

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[9] All of these issues are taken up at length in JONATHAN E. NUECHTERLEIN & PHILIP J. WEISER, DIGITAL CROSSROADS: AMERICAN TELECOMMUNICATIONS POLICY IN THE INTERNET AGE (MIT Press, 2005).

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Education

New York University School of Law. J.D., 1994 with High Honors.

Honors: *Sommer Award* for excellence in scholarship, service and character (highest award given at graduation); *Rubin Law Review Prize* for the outstanding note in public law; *Orson S. Marden Moot Court Competition Runner-up; Order of the Coif.*

Swarthmore College. B.A., 1990 with High Honors. Major in Political Science. Minors in Economics and History. Concentration in Public Policy.

Academic Experience

Associate Professor, University of Colorado
Jan. 1999 – present. Joint appointment in the School of Law and in the Interdisciplinary Telecommunications Program. Recipient of Teaching Excellence Award in 2000-2001.

Law and Public Affairs Program Fellow, Princeton University
Aug. 2001 – June 2002. One of six law professors selected as a scholar-in-residence.

Founder and Executive Director, Silicon Flatirons Telecommunications Program.
Jan. 2000 – present. Responsible for creating a program designed to foster interdisciplinary discussions on telecommunications topics, bring leading national figures to campus (Commerce Committee Chairman Hollings, FCC Chairman Michael Powell, etc., see www.silicon-flatirons.org), and support students in developing their interest in telecommunications and high technology by sponsoring a journal, writing competition, mentoring, and internships.

Professional Experience

Special Master, Colorado Public Utilities Commission
Jan 2001 – Jan 2002. Developed, through a combination of mediation and arbitration, a proposed plan to govern Qwest's wholesale performance after its entry into long distance.

Special Counsel to Cablevision Systems Corporation
Aug. 1998 – Dec. 1998. Coordinated legal and regulatory strategy on behalf of Cablevision in a proceeding investigating Boston Edison's entry into telecommunications and cable markets.

Senior Counsel to Joel Klein, Assistant Attorney General, Antitrust Division, US Dept. of Justice
Sept. 1996 – Aug. 1998. Responsibilities included advising the AAG on antitrust policy, primarily in the telecommunications industry, as well as participating in civil investigations.

Law Clerk to Justice Byron R. White (Ret.), United States Supreme Court. Sept. 1995-Aug. 1996. Also served as law clerk to Justice Ruth Bader Ginsburg.

Law Clerk to Judge David M. Ebel, Tenth Circuit Court of Appeals. Sept. 1994- Aug. 1995.

Director of Transition, Town of Greenburgh. November 1991-January 1992.

Campaign Manager, Feiner for Town Supervisor. June-November 1991.

New York City Urban Fellows Program. September 1990-May 1991.

Service Activities

Community:
Pro Bono Legal Representation
June 1999-present – served as counsel in four cases before the U.S. Court of Appeals for the Tenth Circuit. Represented indigent litigants in three of the cases.

Hillel Council of Colorado Board of Directors. June 1999 – June 2001

Boulder-Denver Jewish Partnership Project. August 2000 – June 2001

Telecom Dept.:
Dept. of Telecom Director Search Committee. Jan. 1999 – Jan. 2000; June 2001 – March 2002.

Chair of Telecom. Policy Lunch Series. August 2002- May 2003.

Transition Committee For Organization of CAETE. April 2003-August 2003.

Law School:
Law School Academic and Curricular Affairs Committee. Jan. 1999 – June 2001, Member. August 2002 – present, Chair.

Advisor to Student Telecom Association/IP Students Association. September 1999 – present.

Chair of Clerkship Committee. Jan. 1999 - present.

Advisor to Journal on Telecommunications and High Tech Law. June 2001 – present.

Campus and System:
Organizing Committee, Discovery Learning Center Conference. Jan. – May 2000.

Information Technology Self-Study. August 2000 – May 2001.

ATLAS Advisory Board August 2000 – present.

CIT Telecommunications Advisory Board. May – Oct. 2002.

Technology Transfer Director Search Committee. March - June 2001.

University Committee on Discoveries, Chair September 2003-present

Technology Transfer Advisory Board, January 2004-present

Publications

Digital Crossroads: American Telecommunications Policy in the Internet Age (MIT Press 2005) (with Jon Nuechterlein)

"Cooperative Federalism and Its Challenges," 2003 Mich. St. L. Rev. 727.

"Regulatory Challenges and Models of Regulation," 2 J. Telecom. & High Tech. L. 1-15 (2003).

"Justice White and Judicial Review," 74 Colo. L. Rev. 1305-1318 (2003)

"Toward A Next Generation Regulatory Regime," 35 Loyola L. Rev. 41 (2003).

"Modularity, Vertical Integration and Open Access Policies: Towards A Convergence of Antitrust and Regulation in The Internet Age" (with Joseph Farrell), 17 Harv. J. L. & Tech. 85 (2003)

"Goldwasser, The Enforcement of the Telecom Act, and Antitrust Remedies," 55 Admin. L. Rev. 1-21 (2003)

"The Internet, Innovation, and Intellectual Property Policy," 103 Colum. L. Rev. 534-613 (2003).

"Law and Information Platforms," 1 J. Telecom. & High Technology L. 1-35 (2002).

"The Imperative of Harmonization Between Antitrust and Regulation," 698 PLI/Pat 73-88 (2002).

"Cooperative Federalism, Federal Common Law, and The Enforcement of the Telecom Act," 66 N.Y.U. L. Rev. 1692-1767 (2001).

"Standard Setting, Internet Governance, and Self-Regulation," 28 N. Kent. L. J. 822 (2001).

"Toward A Constitutional Architecture For Cooperative Federalism," 79 N.C. L. Rev. 663 (2001).

"Promoting Informed Deliberation and A First Amendment Doctrine For A Digital Age: Towards A New Regulatory Regime for Broadcast Regulation," *Deliberation, Democracy, and the Media* (Costain and Chambers, eds., 2000).

"Paradigm Changes in Telecommunications Regulation," 71 U. Col. L. Rev. 819 (2000).

"*Chevron*, Cooperative Federalism, and Telecom Reform," 52 Vand. L. Rev. 1 (1999).

"What's Quality Got To Do With It: Constitutional Theory, Politics and Education Reform," 21 N.Y.U. Review of Law & Social Change 745 (1995).

"Ackerman's Proposal for Popular Constitutional Lawmaking: Can It Realize His Aspirations for Dualist Democracy?," 68 N.Y.U. L. Rev. 907 (1993).

Notable Presentations

"Policing the Commons," Presentation at the Telecommunications Policy Research Conference (Oct. 2, 2004)

"Institute for Regulatory Law and Economics," Progress and Freedom Seminar for State Regulators (May 16-20, 2004)

"The Future of Voice over IP," Colorado Telecommunications Association Winter Conference (January 26, 2004)

"Academic-FCC Seminar on Developing A Research Agenda," Federal Communications Commission (December 5, 2003)

"Legal Issues in the Secure Digital Domain," Cablelabs Summer Conference (August 12, 2003).

"Digital Content and Its Challenges, Colorado Intellectual Property Institute (June 13, 2003)

"Open Source Software Licenses & the University," Presentation to Professors Involved In Technology Transfer (December 10, 2002)
"Intellectual Property Issues Faced by Universities," Presentation to President's Teaching Scholars Retreat (Oct 12, 2002)
"Networks Unplugged: Toward A Model for Regulating Information Platforms," Presentation at the Telecommunications Policy Research Conference (Sept. 24, 2001)
"Economic Issues in the Telecommunications Industry," Testimony before Colorado State Legislature (July 29, 1999)

Courses Taught

Antitrust Law
Constitutional Law
Introduction to Intellectual Property Law
Law and Economics of the Information Age (seminar)
Privacy, Security, and Digital Rights Management
Separation of Powers (seminar)
Supreme Court Decisionmaking
Telecommunications Law and Policy

Selected List of Conferences Organized:

Telecommunications Law for the Twenty First Century, January 2000
Telecommunications After Bell Entry, April 2000
The Challenges of Convergence, September 2000
The Future of High Tech Startups, February 2001
Public Values and the Architecture of the Internet, March 2001
Role of Localities and States in Telecom Regulation, April 2001
After Microsoft, September 2001
The Future of Broadband Communications Monday, November 2001
The Regulation of Information Platforms, February 2002
The Commons-Property Rights Model Debate For Wireless Spectrum Policy, February 2002
Privacy, Security, and Digital Rights Management, Monday, Sept. 30 2002:
The Future of Communications Policy: An Address By Senator Fritz Hollings, October 2002
International Telecommunications Regulation, Monday, Oct. 21 2002
FCC Chairman, Michael Powell, New Directions In Wireless Policy, Oct 30, 2002
Models of Regulation For The New Economy, February 2003
Cleaning Up The Telecom Mess, February 2003
New Frontiers in Wireless Policy, April 2003