

The Future of Video: New Approaches to Communications Regulation

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Rapporteur



THE ASPEN INSTITUTE

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Executive Director
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Contents

FOREWORD , <i>Charles M. Firestone</i>	vii
EXECUTIVE SUMMARY	xi
THE FUTURE OF VIDEO , <i>Philip J. Weiser</i>	
Introduction	3
The Digital Broadband Migration and the Emerging Video Marketplace	5
<i>The Digital Broadband Migration Comes to Video</i>	7
<i>The Significance of Broadband</i>	11
The Developing Broadband Infrastructure and Its Associated Policy Challenges	15
<i>Toward a Next-Generation Universal Service Policy</i>	15
<i>Economic Regulation</i>	18
<i>Toward Consensus Principles</i>	21
Emerging Video Applications and Content: The New Regulatory Frontier	23
<i>The Role of Intellectual Property Law</i>	24
<i>Creating a New Environment for Effective Licensing</i>	26
<i>Challenges of Digital Rights Management</i>	30
<i>Patent Law</i>	32
<i>Social Regulation</i>	33
<i>The Realities of Internet-Delivered Content</i>	34
<i>Regulating Content in a New Environment</i>	36
Conclusion	38

APPENDIX

Anomalies of Video Regulation:
 Treating Like Services Differently45

Participants..... 59

About the Author 63

Selected Publications from the
 Communications and Society Program 65

About the Aspen Institute
 Communications and Society Program 69

This report is written from the perspective of an informed observer at the conference. Unless attributed to a particular person, none of the comments or ideas in this report should be taken as embodying the views or carrying the endorsement of any specific participant at the conference.

Foreword

Video's role as the next step in the evolution of the Internet is little debated. Video delivered over the Internet (IPTV), the rapid increase in broadband delivery into the home, and the exploding popularity of video sites such as YouTube have signaled a shift in consumer behavior. Google's recent acquisition of YouTube for \$1.65 billion only underscores the medium's growing importance to companies across the communications sector. Attempting to plan for video's next incarnation, however, dredges up a number of issues boiling beneath the surface of current discussions on the Internet. What structural and economic regulation is appropriate in a broadband, IPTV reality? What consumer protections are warranted and who should enforce them? How do we understand and grapple with difficult intellectual property issues inherent in the new media?

In the summer of 2006, the Aspen Institute Communications and Society Program convened the twenty-first annual Aspen Institute Conference on Communications Policy to address these issues. Thirty-four leaders, experts, and regulators in the media, telecommunications, and information technology fields gathered at Aspen, Colorado, for a three-day roundtable to discuss where video services are heading. This report, written by Professor Philip Weiser of the University of Colorado at Boulder, draws together a number of threads from those discussions into a coherent analysis of the central areas of concern for video's transition to an Internet platform.

The debates addressed by the conference participants are not new, but video's impending move to the Internet increases their urgency. The most basic problem to address in planning video's online future is ensuring consumers' access to the reliable high-speed broadband needed to support it. To this end, the conference participants adopted basic principles by which regulators can create effective policy for encouraging broadband adoption among all Americans, articulating five points of consensus regarding the economic regulation of online traffic.

The content contained in online video also promises to raise problems for regulators. This report contains a clear outline of the intellec-

tual property issues most relevant to video's online development, addressing the complexities of licensing, digital rights management, and patent law. The conference also generated steps toward making the Internet a more positive force for children and families while protecting the creative rights of its other users.

While this conference could not hope to settle every conflict regarding regulation's role in video's future, Philip Weiser's report deftly pulls together the points of consensus reached. This report represents a well-reasoned and realistic starting point for the long process of creating productive online video policy.

Acknowledgments

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We thank Philip Weiser for composing this perceptive and coherent representation of the discussion. We are particularly thankful to our participants (listed in an Appendix to this document) for their openness, constructive attitude, and willingness to grapple frankly and honestly with the issues facing the telecommunications industry. Finally, our thanks to Mridulika Menon, senior project manager; Patricia Kelly, assistant director; and Kate Aishton, program coordinator—all of the Communications and Society Program—for working behind the scenes to bring the conference and this report to fruition.

Charles M. Firestone
Executive Director
Communications and Society Program
Washington, DC
December 2006

Executive Summary

The future of video is, in many respects, the story of the Internet's next frontier. The promise of digital broadband networks is that unlike their predecessors, they can carry full-motion video as an application on the Internet. Development of new video programming options—from movieload services such as those offered by Movielink and Amazon.com to user-developed content hosted by YouTube to Apple's new iTV initiative to competitive video services being offered by traditional telephone companies—is only beginning to take shape. In the years ahead, businesses and policymakers will face a series of challenging questions related to this new frontier. This report, which is based on discussions at the 21st Annual Aspen Institute Conference on Communications Policy, "The Future of Video: New Approaches to Communications Regulation," outlines a series of important issues relating to the emergence of a new video marketplace that is based on the promise of Internet technology.

The future of video is well framed by the stories of how the music and voice industries have met the challenges wrought by the Internet. In the late 1990s, the music industry failed to meet the challenges of digital distribution and suffered as a result. Recording studios originally resisted this new technology, turned to the courts to fight peer-to-peer file-sharing systems, and failed to embrace digital distribution (sacrificing a market opportunity) until they embraced Apple's iTunes. In the early to mid-2000s, landline telephone connections optimized for voice communications began to confront similar challenges—with both Voice over Internet Protocol (VoIP) and wireless phones undermining their core product offering and resulting in a rate of "line loss" of about 7 percent per year. The next frontier for the Internet will be its impact on the video programming market.

The Internet's impact on the video industry is likely to play out over a period of several years. Notably, the levels of bandwidth delivered by broadband networks is likely to continue to grow, technologies for transferring video programming delivered via the Internet to the TV set (where people generally watch video programming) are still developing, and consumers are adjusting to new opportunities created by

the Internet. Such opportunities include accessing content not previously available through traditional distributional outlets (e.g., watching *Wonder Woman* over a broadband connection), finding user-created content on websites such as YouTube or MySpace, and downloading popular TV shows to an iPod so a user can watch them at any time, anywhere.

Even given real uncertainty about how the Internet will change the video business, there are compelling policy challenges—relating to the underlying broadband infrastructure (its build out, adoption, and regulation) and the content and services that ride on top of it—that must be addressed in the very near term. This report offers both an examination of how video programming is changing and how policymakers should address those changes. In general, the report regards these changes as a positive development that policymakers should facilitate. At the physical layer level, policymakers can enable new video delivery models by promoting continued deployment of broadband infrastructure, supporting adoption of broadband across all socioeconomic groups, and evaluating concerns about broadband providers' abuse of any market power they possess.

At the content layer, policymakers should focus on ensuring sound intellectual property policy that protects creativity and facilitates innovative and legitimate uses of content. Given the likely increase in the sources of content available to consumers, it is important that policymakers also support an effective program of self-regulation and, where necessary, government enforcement to address concerns about harmful content, particularly with regard to children. Finally, in revisiting legacy regulations, policymakers should harmonize regulation across different platforms—for example, lifting regulations imposed on TV broadcasters to ensure video programming for children—in a manner that does not create barriers for new entrants (and individual users) to use the Internet as a platform for distributing video programming.

This report engages the issues related to the future of video in five parts: after an introduction, it discusses the relevant technological and business developments and then turns to the questions relating to the emerging broadband infrastructure reforming universal service policy to facilitate greater deployment and adoption of broadband, as well as eco-

conomic regulatory concerns discussed as part of the network neutrality debate. Next the report turns to questions raised by the proliferation of video distribution options, such as what applications and content distribution models will develop and how those models will relate to copyright policy and social regulatory goals such as preventing consumers from harmful content. Finally, the report offers a short conclusion.

**THE FUTURE OF VIDEO:
NEW APPROACHES TO
COMMUNICATIONS REGULATION**

Philip J. Weiser

The Future of Video: New Approaches to Communications Regulation

Philip J. Weiser

Introduction

To set the tone for the conference, all of the participants recounted their next-generation video moments. For Rob Atkinson, President of the Information Technology and Innovation Foundation (ITIF), the moment was watching the “Amazing Juggling Finale,” featuring performer Chris Bliss, on Google Video after a friend e-mailed him a link to the short clip. Here’s how the *Washington Post* described the videos Atkinson raved about:

It’s just a guy, three balls and an ornate stage at some unnamed live event. The Beatles’ melancholy “Golden Slumbers” begins playing on a loudspeaker, and the gray-haired man in the dark shirt and pants is suddenly juggling in perfect sync to the music.

For 4½ minutes, he tosses and grabs, his hands and body language capturing the pace and mood of the Fab Four as they build to the rousing three-song finale of the “Abbey Road” album. When the music ends and the last ball is caught, the crowd is on its feet, roaring. The man takes a bow and walks off the stage.¹

The video itself is riveting, Atkinson explained, but its back story makes it even more compelling. As he explained, the clip was actually from a 2002 comedy festival and remained a largely unnoticed posting on Bliss’s personal website until early 2006, when someone came across it and sent to a group of friends. The video quickly became an Internet sensation and, thanks to the wonders of viral marketing, was viewed more than 20 million times by mid-April 2006. As of this writing, it has been viewed more than 7 million times on Google Video alone. In fact, the video is so popular it received what might be the highest compli-

ment possible: Someone did a parody of it.²

The Chris Bliss video represents a stark example of how the Internet can transform video markets. In the changing video marketplace, consumers are moving a long way from the appointment viewing and “must see” Thursday lineup of yesteryear. NBC, for example, once prided itself on the appointment viewing of its Thursday night lineup; as recently as 1988, its most popular program, *The Cosby Show*, garnered a 42 percent share of the total prime time viewing audience. Today, not much more than that percentage of total viewers watch the prime time shows on all four major networks combined, with a myriad of cable networks attracting increasing numbers of viewers. The fragmentation of the viewing audience is even more dramatic if one begins to consider that some consumers who once viewed prime time programs now view programs via the Internet, DVDs, or other media platforms.

The revolutionary aspect of video programming is that programs can reach a large audience without the aid of a distribution platform.

The revolutionary aspect of video programming such as Chris Bliss’ juggling act is that such programs can reach a large audience without the aid of a distribution platform such as NBC. YouTube, which reportedly is responsible for 60 percent of all video viewed online and played more than 100 million videos daily in the fall of 2006,³ enables consumers to be their own talent scouts and programmers—as opposed to telling them what programming is “must see.” Other companies have followed YouTube’s lead and have moved quickly to roll out their own online video offerings, with the Yahoo! Current Network and Microsoft’s Softbox on MSN Video offering platforms for users to upload programming. Responding to changing viewing habits, NBC itself has even rolled out a new platform for its shows, the National Broadband Network (NBBC), which will allow content producers to syndicate their programs to NBBC. Unlike other providers in the online video space, however, NBBC will not allow users such as Chris Bliss to upload content of their own creation.

Which services will thrive in the Internet-enabled video space and the effect of these services on traditional video programming outlets remains

to be seen. As the *New York Times* reports, however, “Video delivered over the Internet is clearly shaping up to be an actual business that advertisers are interested in.”⁴ To that end, Google recently agreed to pay \$1.65 billion to purchase YouTube, which had become an overnight Internet video sensation—whereas Google’s own Google Video had failed to gain traction in the marketplace. With the dramatic changes now taking hold in the emerging video marketplace, policymakers are just beginning to confront a series of challenging issues relating to both the development of the infrastructure required to support Internet-enabled video delivery and the content of programs themselves. This report seeks to understand the nature of current changes and advise policymakers on how to revise regulatory policies in light of these changes.

The Digital Broadband Migration and the Emerging Video Marketplace

In many respects, TV technology is the laggard in the digital broadband migration. A large plurality of consumers, for example, still watch video programming delivered via analog connections. To be sure, satellite TV firms (Echostar and DirecTV) rolled out their services with digital technology from the beginning, and cable providers have upgraded their networks to provide digital cable, but only about half of all cable customers have made the switch. In wireline video competition, traditional telephone companies are just beginning to deploy their own video services in direct competition with incumbent cable companies. In the arena of broadcast television, there is now a fixed date (in early 2009) for consumers to begin receiving over-the-air digital television, but only a small minority of consumers have made the switch. Video delivery over the Internet has begun in earnest only in the past year (with the advent of YouTube), leaving a series of questions about how it will evolve.

The impact of the Internet on the video programming industry is likely to play out over a period of years. For starters, the television is still the center of consumers’ attention (the average household still watches more than 8 hours of TV per day) and will remain so for some time, particularly because broadband speeds are not capable of delivering high-definition video programming, electronics markets are still developing new products to drive convergence (such as Apple’s iTV initiative), and consumers (as well as producers) take time to adapt to new opportunities.

Instructively, however, consumers with higher-speed broadband connections are spending less time watching TV than their fellow Americans, and millions of Americans have already embraced YouTube—leading Google to pay \$1.65 billion for the new start-up video phenomenon.

Although the exact path of the emerging video marketplace is unclear, one can hardly deny that developments now taking root ultimately are going to transform the video industry. Not only will new technology empower user-developed content (such as the Chris Bliss video), it also will allow for specially developed content for the Internet (e.g., discussions of niche subjects) and meet demand for a previously untapped vault of old television shows (e.g., *Wonder Woman*, which is now available through AOL's IN2TV) that are not currently available through any other outlet. As Ted Leonsis, Vice Chairman of AOL, said, "Convergence is finally really happening. The bandwidth is there, the audience is there; we are getting 113 million customers a month and 14 million simultaneously on our servers. The ad market is exploding."²⁵

The emerging new platforms for delivering video content via the Internet provide enormous opportunities and challenges for established providers. Consider, for example, the case of traditional television broadcasters. To compete in the emerging video marketplace, explained Marsha MacBride, Executive Vice President for Legal and Regulatory Affairs at the National Association of Broadcasters, broadcasters must compete for attention in an ever-expanding media universe and evaluate opportunities to use valuable content that can now be made available via the Internet.

For new entrants, the Internet offers the opportunity for content developers to take advantage of what *Wired* Editor-in-Chief Chris Anderson has called "The Long Tail." After observing the dynamics of electronic commerce via the Internet, Anderson explained that businesses such as Netflix are able to sell a large number of works at the "tail" end of the distribution curve. As he explained in an essay he later developed into a book:

Hit-driven economics is a creation of an age without enough room to carry everything for everybody. Not enough shelf space for all the CDs, DVDs, and games produced. Not enough screens to show all the available movies. Not enough channels to broadcast all the TV programs, not enough radio waves to play all the music

created, and not enough hours in the day to squeeze everything out through either of those sets of slots.... This is the world of scarcity. Now, with online distribution and retail, we are entering a world of abundance. And the differences are profound.⁶

The “long tail” phenomenon can be a disruptive force for established industries that are premised on scarcity and promoting hits. Blockbuster, with its guaranteed stock of video hits for rental, faced a formidable challenge in Netflix, which not only challenged Blockbuster’s reliance on late fees (which Netflix did away with) but also countered with a large inventory that catered to all sort of niches. For consumers interested in documentaries, for example, Blockbuster cannot compete with Netflix’s selection. Moreover, Netflix helps consumers identify content they would enjoy on the basis of their previous viewing experiences.

By facilitating development of long-tail marketplace opportunities, Internet-based video distribution platforms such as Netflix can support and enable development of new video programming that previously would not have survived in a hit-driven world. Moreover, such platforms also can facilitate new entry—and undermine established business models—by establishing an alternative to Hollywood’s model of programming development and hit-driven mentality. This assessment does not necessarily imply that the new video marketplace will be devoid of hits; it does suggest that there are increasing opportunities and vehicles for niche programming to find a receptive audience.

The Digital Broadband Migration Comes to Video

Robert Pepper, Senior Managing Director of Global Advanced Technology Policy for Cisco Systems, began the formal part of the conference by underscoring that true convergence is finally happening and explaining that the ingredients are now in place for a new video marketplace to emerge. To set the stage for the emerging video marketplace, Pepper outlined what he regarded as four predecessor stages. The first stage was the introduction of television with a limited number of choices—the “big three” TV networks. The second stage involved introduction of more choices, originally through creation of UHF channels and then with cable TV (as well as, much later, satellite television). The third stage

came in the 1980s, with increased consumer control—notably through introduction of the remote control and the VCR. The fourth stage involved a level of interactivity and personalization typified by the digital video recorder (DVR), which enables consumers to personalize their viewing options and receive recommendations tailored to their interests.

Finally, Pepper explained, the emerging video marketplace is increasingly featuring users as producers. In this stage—now only beginning, and typified by the Chris Bliss video—the costs of program development and distribution are likely to be far lower than in previous eras. As David Bollier reports in a previous Aspen Institute report, *When Push Comes to Pull*, user-based product development even occasionally outperforms conventional markets by being “more flexible, personally satisfying, and culturally authentic” than conventional (and centralized) media.⁷

True convergence is finally happening...the ingredients are now in place for a new video marketplace to emerge.

Robert Pepper

As Pepper outlined, a series of technological developments underlie development of the emerging video marketplace. For the current stage of the industry’s development—the future of video—a critical development is widespread adoption of broadband Internet access. The original development of Internet applications during the mid- to late 1990s catered to a narrowband (dial-up) infrastructure. During the late 1990s consumers began to migrate to broadband connections, and Napster, the first popular broadband application, demonstrated that consumers craved digital media (in Napster’s case, mostly music). In the early 2000s, voice over Internet Protocol (VoIP) services grew in popularity, with consumers increasingly adopting such services not only from “over the top” VoIP providers such as Vonage, but also from cable companies that marketed VoIP offerings along with their core broadband product. More recently, with increasing bandwidth and a broader base of consumers using broadband connections, video-over-Internet applications such as YouTube have been growing in popularity. As Pepper explained, broadband users behave in fundamentally different ways from their narrowband counterparts: They spend more time on the Internet, use different Internet applications, and spend less time watching television (see Figure 1).

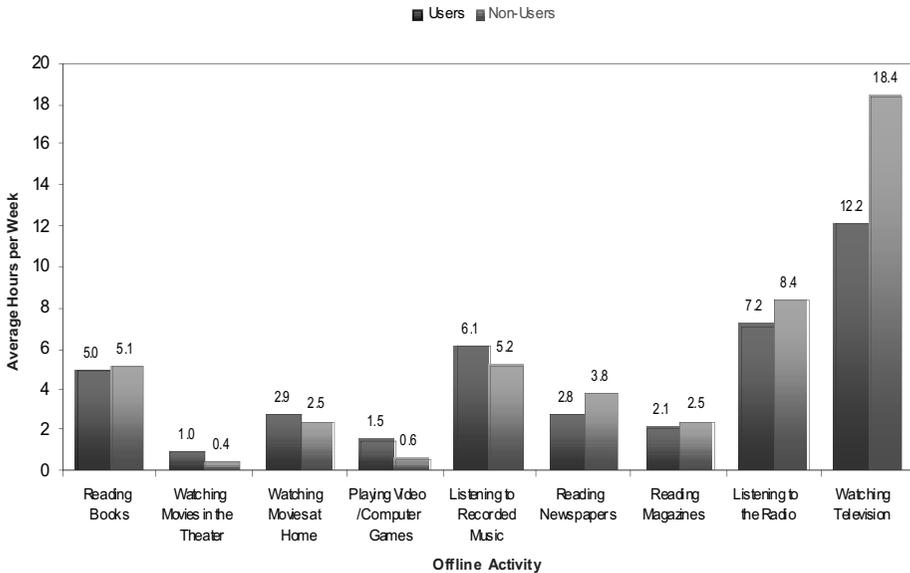


Figure 1: Offline Activities of Broadband Users versus Non-Broadband Users

Source: "Surveying the Digital Future," Center for the Digital Future, USC Annenberg School, 2006.

The implications of the emerging video marketplace are only beginning to become clear. Most major media companies, however, fearing being left behind, are not waiting to act. Bill Bailey, Vice President of Government Relations at the Walt Disney Company, explained that for Disney a critical message is that "it used to be that there was a debate over whether content was king or distribution was king; now the consumer is king." Moreover, Bailey continued, producers of video content must learn from the experience of the music industry: Consumers want content delivered to them "when they want it and how they want it." Disney's commitment to meeting this challenge underlies its extensive cooperation with Apple, both in terms of making available TV shows for downloading to a video iPod and in terms of Apple's more ambitious iTV initiative, which aims to enable streaming of movies and TV programs from computers to consumers' TV sets.

Eli Noam, professor of business at Columbia University, suggested that the new media initiatives spearheaded by Disney, News Corp. (e.g.,

its acquisition of MySpace), and the telephone companies constituted risky bets on the future. They are “good for consumers,” he explained, “but as a shareholder, I am worried about how they are going to make

“It used to be that there was a debate over whether content was king or distribution was king; now the consumer is king.”

Bill Bailey

money.” Dean Brenner, Vice President of Government Affairs at QUALCOMM, Inc., suggested that investments in new technological frontiers will invariably pay off. “People thought QUALCOMM was crazy for believing in the capacity of mobile phones to carry data,” but that effort succeeded wildly; similarly, Brenner suggested, new video delivery options, via the Internet or mobile phones, will succeed and be profitable for leading innovators. Based on the early results, the news is indeed good for Disney: There were 125,000 film downloads from iTunes in the first week, and the initiative had projected revenue of \$50 million for the first year.⁸ Similarly, MySpace struck a deal with Google that promises \$900 million in revenue, based on advertising on the site. The effort by telephone companies to enter video markets is still unproven, but some analysts project that by 2010, 49 million viewers around the world will subscribe to some form of “IPTV”—making it a \$13 billion industry.⁹

Regardless of the technology’s economic impact, conference participants were confident that the explosion of content and alternative distribution systems would promise far greater levels of fragmentation than ever before. As Link Hoewing, Vice President of Technology Policy at Verizon Communications, noted, “No longer can Walter Cronkite pull us all together.” As the era of a truly mass media comes to an end (i.e., when shows such as *The Cosby Show* were watched by a significant percentage of Americans at the same time), commentators are beginning to debate whether the new era—characterized by content plenty that is increasingly personalized to niche tastes—is going to be a good or bad development for American democracy and culture.¹⁰

The new video marketplace, without the strong guiding hand of three major networks and hit programming, will present viewers with a large variety of programming options and threaten consumers with information overload. Based on the development of blogs, which are

still mostly text but increasingly include video programming as well, “power laws”—a form of the network-effects phenomenon in which a service is more valuable as more individuals use it—are likely to lead to heavy reliance on certain sites (such as YouTube). As Clay Shirky has explained, power laws characterize a skewed distribution toward a limited number of points; these laws explain why a relatively select number of outlets tend to garner the greatest attention of Internet users (as measured by inbound links).¹¹ In addition to power laws (i.e., users tend to watch what other users are watching), other cues also are likely to attract Internet users seeking to economize on their search costs—including systems such as the one Netflix uses to suggest movies that would appeal to viewers, based on their past viewing habits, and rating systems such as eBay’s that attest to a seller’s reliability.

**“No longer can
Walter Cronkite
pull us all
together.”**

Link Hoewing

The Significance of Broadband

The changing nature of consumer behavior in the Internet age means that the same content might be viewed on a mobile phone, a computer, or a television. Providing the consumer with access to this content in a flexible fashion is “a challenge to established content providers,” explained Joe Waz, Vice President and Public Policy Counsel for Comcast. Steven Teplitz, Vice President and Associate General Counsel for Time Warner, underscored this point, explaining that “the ongoing march of technology is changing how consumers are purchasing services and we deliver them.” In many respects, the rise of Google typifies this challenge to established providers; Google’s mission—summed up by Andrew McLaughlin, Google’s Head of Global Public Policy—is to “enable access everywhere and develop new ways to use computing platform.” This “access everywhere” model will involve not only Internet-based content services but also mobile video services, such as Sprint’s recently announced sports and entertainment network.

Regardless of the service delivery model, Joe Waz of Comcast explained, someone needs to build the physical networks. The cable industry has invested more than \$100 billion over the past 10 years to

develop cable networks, and some reports suggest that the industry will need to invest even more to compete with fiber-to-home build-outs such as that spearheaded by Verizon. At AT&T, noted Jeff Brueggeman, AT&T's Vice President for Regulatory Policy, the focus is on building out the company's broadband infrastructure and being "a network company first and foremost," with "a lot of partnering to get customers whatever services they want, however they want it." Given that cable companies and telephone companies are providing the overwhelming number of broadband connections, several conference participants remained concerned about the state of broadband deployment and adoption.

As an initial matter, some participants urged a focus beyond the mere numbers relating to adoption and the level of bandwidth provided. Other countries, explained Andrew McLaughlin of Google, have far greater levels of bandwidth—30 megabits per second, compared with 1-5 megabits per second in the United States. Similarly, Dan Gillmor, Director of the Center for Citizen Media, explained that slow upstream speeds represent an enormous failing given that "users are producing new products and services as members of communities"; the promise of user-developed content, Gillmor suggested, will be realized only if bandwidth availability is more symmetric.

The principal issue that concerned participants in relation to broadband deployment is the search for a third broadband pipe: Will a competitor emerge to challenge the cable and telephone companies in this market? In contrast to the 2005 report, which featured the optimistic claim that the broadband market was at 2½ competitors and counting, several participants suggested that the search for the third broadband pipe appeared more daunting. As Federal Trade Commissioner Jonathan Leibowitz stated, we must ask ourselves whether we are facing "a natural duopoly." Blair Levin, Managing Director and Telecom and Media Analyst at Stifel Nicolaus, stated his view plainly: "I don't see a [third] broadband pipe emerging." Initially, Levin explained, he regarded wireless broadband—particularly as supported by satellite TV providers—as a promising technology, but given results of the recent Advanced Wireless Services (AWS) auction (in which no new entrant purchased a nationwide footprint) and the lack of new spectrum available until January 2009, he explained that the advanced development of the market and the "power of the bundle" will make for the emergence

of a new pipe provider too difficult. Echoing Levin's analysis, Dale Hatfield, adjunct professor at the University of Colorado, added that "there is lots of money being invested today in particular architectures [such as Internet Multimedia Substation (IMS)] that could make" entry more difficult and be difficult to address down the road. As one observer has suggested with regard to such fears, technologies such as IMS "will let broadband industry vendors and operators put a control layer and cash register over the Internet and creatively charge for it."¹²

The limited cause for optimism regarding the emergence of a third pipe is captured by the suggestion that "good enough" wireless broadband might keep the cable and telephone companies on their toes. As Andrew Odlykzo explains:

What is needed is a wireless technology that provides bandwidth of a few tens of megabits per second (all that most consumers will need for a while, given how slowly display technology is changing), a range of a few hundred meters, to be able to serve a number of households, and ability to offer voice (which is where the money will continue to be for quite a while yet, and which is not hard to do when there is enough bandwidth). Once that is available, one could build new wireless services to compete with established wireline ones. Whether such wireless systems would use licensed or unlicensed spectrum is an open question.¹³

In short, Odlykzo's argument suggests that wireless broadband need not succeed wildly—merely enough to pressure its wired counterparts. Whether such wireless broadband offerings will emerge remains to be seen. There are some hopeful signs on the horizon, however, including wireless Internet service providers (WISPs) and municipalities using wireless technology for their own uses and, in cities such as San Francisco, making it available as a public service for their citizens.

A different type of optimistic perspective, offered by James Gattuso, Research Fellow in Regulatory Policy at the Heritage Foundation, main-

Encouraging greater levels of broadband adoption is a critical goal of communications policy.

tains that two broadband providers may be enough competition. After all, Gattuso explained, some markets seem to function reasonably well with only two producers—for example, the commercial aircraft market, with Boeing and Airbus. Other participants disagreed, explaining that such markets are materially different than the broadband market because, among other reasons, purchasers in such markets are far more sophisticated and, unlike those markets, broadband functions as an enabling technology for other applications.

The importance of broadband as an enabling technology highlights the concern that a large number of consumers have not yet adopted broadband and do not appear poised to do so within the next several years. Commissioner Michael Copps of the Federal Communications Commission (FCC) championed the importance of focusing on broadband deployment, calling it the “central infrastructure challenge of our time”; telemedicine, tele-education, and other emerging applications all depend on consumer adoption of broadband technology. As Figure 2 illustrates, nearly 12 percent of U.S. households probably will still be without broadband technology by 2010.

	2004	2005	2006	2007	2008	2009	2010
Dial-up	34.5	30.6	26.1	21.3	16.6	12.8	10.6
Broadband	35.3	43.7	52.2	60.8	68.9	75.6	80.0
Online Households	69.8	74.3	78.3	82.1	85.5	88.4	90.6
Total Households	114.7	116.8	119.0	121.2	123.3	125.5	127.6
Household Internet penetration	60.9%	63.6%	65.8%	67.7%	69.3%	70.4%	71.0%
Broadband penetration of online households	50.6%	58.8%	66.7%	74.1%	80.6%	85.5%	88.3%

Figure 2: Online households in the United States, by access technology, 2004-2010

Data: U.S. Department of Commerce, September 2004. Figures in millions and penetration by percentage.

In short, all conference participants agreed that encouraging greater levels of broadband adoption—and access to the applications and content that rides on this infrastructure—is a critical goal of communica-

tions policy. As David Honig, Executive Director of the Minority Media and Telecommunications Council, explained, “there are millions of people not able to participate in democracy or recognize our creative potential” without broadband, making universal broadband “the most important civil rights issue of the day.” Notably, this civil rights issue is not simply about racial issues but rests—in large part—on income disparities; one study, for example, found that whereas six of every 10 households with an annual income above \$100,000 subscribes to broadband Internet access, only one of every 10 households with an annual income below \$30,000 has such access.¹⁴

The Developing Broadband Infrastructure and Its Associated Policy Challenges

Conference participants recognized the importance of facilitating available and affordable access to broadband services, but they cautioned against using the existing model of universal service assessments to do so. Moreover, as the Working Group report that framed the discussion underscored, the current debate on this topic is compromised by the lack of clear understanding of the reasons for and levels of broadband adoption. In short, these two concerns—that the next-generation policy should not simply follow the current voice model and that new policies should be grounded in a clear understanding of broadband adoption—underpinned the four principles outlined as part of a next-generation universal service policy.

Toward a Next-Generation Universal Service Policy

First, participants emphasized the need to take a broad view of the broadband adoption problem. Such an approach requires examination of all factors that might affect adoption, including service pricing and availability, hardware costs, and technological literacy. Unfortunately, most of the reports on this topic are less than illuminating. To be sure, there are a few initiatives that are designed to better understand this issue but there is a remarkable level of uncertainty and an array of sometimes inconsistent explanations for the state of U.S. broadband adoption. Given a better understanding of consumer behavior, policymakers can begin to develop more effective policy strategies. Thus, the first principle of sound broadband policy is to develop a careful under-

standing of the issue and then to design policies to facilitate adoption, based on the areas that matter. Moreover, in so doing, policymakers should develop a set of metrics for defining success in this endeavor.

The second principle of a next-generation universal service policy is that policymakers should adopt a flexible (and evolving) target for broadband adoption, based on market experience. In other words, the goal of universal service policy should be for all citizens to be able to use broadband, regardless of income. Higher levels of broadband adoption would benefit the United States politically, culturally, socially, and economically. In particular, not only would ubiquitous adoption of broadband better promote widespread access to news, information, and public safety services, it also would enable economic growth and opportunity. Even without attempting to resolve whether the United States' relative level of broadband adoption (i.e., commonly cited International Telecommunications Union (ITU) rankings that place the United States in the mid-teens internationally)¹⁵ is relevant as matter of national competitiveness, conference participants did conclude that such comparisons suggest—at a minimum—that greater levels of adoption are certainly feasible.

The principle of using a flexible and evolving target for broadband adoption underpinned the participants' policy recommendation that the United States adopt a means-tested program for supporting broadband deployment. In particular, such a program could be charged with the objective of lifting penetration rates for low-income households to rates comparable with those of households in a defined, high-income group that serves as the adoption benchmark. For example, if 75 percent of all households earning more than \$100,000 annually are subscribing to broadband connections that are capable of two-way video transmission, 75 percent of households earning less than \$100,000 also should be subscribers. The participants recognized that this proposal is merely a starting point for a broadband subsidization program because some adjustments for other demographic characteristics may be necessary (e.g., older Americans may not be adopting broadband for other reasons), as well as adjustments based on geography (e.g., supporting fiber optic build-outs in rural areas may be impractical). Moreover, several participants emphasized that broadband penetration rates reflect not merely the availability of broadband but also the availability of applications that will promote adoption and serve important public interest objectives (e.g., dis-

tance learning, telemedicine)—suggesting that some efforts to support development of such applications might be warranted. In any event, the virtue of a flexible and evolving approach is that it would provide a market test of the costs and benefits of broadband adoption.

Third, as mentioned above, participants believed that universal service support for broadband should be separated from the universal service fund (USF) that supports “plain old telephone service” (POTS). In particular, the POTS USF reform process is proceeding on its own track and faces numerous legacy issues and constraints.¹⁶ By contrast, broadband universal service policy presents more of a clean slate and thus may have a wider range of politically feasible policy choices. Significantly, policymakers can turn to sources of general revenue to support broadband deployment rather than industry-specific assessments that support POTS USF assessments. Use of industry-specific assessments is unfortunate because it actually deters users from communicating insofar as it raises the price of communications services. From an economic perspective, industry-specific assessments should be reserved for goods for which the government wishes to discourage consumption (e.g., tobacco); by imposing such assessments on communications services, the government sends consumers exactly the wrong message.

Finally, participants agreed that policymakers should support and conduct a series of decentralized experiments that are centrally funded through a competitive grants program. Notably, efforts supported by this program would provide alternative means of promoting broadband universal service to supplement those already in place. Initiatives supported by such a program could include using new technologies to support wireless broadband (such as WiMax), different subsidy models (including voucher systems or reverse auctions to provide covered services), and various policies to promote competition. As envisioned, this program would be open to both private and public applicants and would seek to identify policies that work and can be applied on a national scale.

The initiative to support new experiments to drive broadband adoption would differ from previous efforts, including the National Telecommunications and Information Association’s (NTIA’s) Technology Opportunity Program. Notably, proposals funded under this system would focus on promoting broadband adoption by underserved groups. Moreover, policies developed under this program would not need to be self-funding or identify other sources of funding. For example, the goal

of an experimental voucher program would be to establish whether such a program could be a model for a national policy that would be funded through some sort of tax or universal service fee.

Economic Regulation

In general, conference participants concurred that broadband should not be subject to any of the traditional forms of common carriage regulation (e.g., price, entry and exit, service quality). The primary concern discussed at the conference was whether broadband providers have market power and are in a position to undermine the development of applications—either new services or delivery of content—from upstart firms such as YouTube. Participants agreed that the debate in Washington, D.C., on this issue was often surreal, unintelligible, and even comical. As Blair Levin of Stifel Nicolaus put it, “the network neutrality debate was the most amusing debate ever, but the intellectual content was not focused on which regime would produce more innovation.”

The participants focused on the question of which economic principles should guide the inquiry into what model of regulation (if any) would be appropriate for overseeing access to broadband. One guiding principle sketched out by Michael Katz, Sarin Chair in Strategy and Leadership at the University of California-Berkeley’s Haas School of Business, was that “two-sided markets” may give rise to novel pricing strategies. As Katz explained, in a two-sided market a company must attract entry on two sides—for example, users of broadband and providers of applications for them to use—and may use different types of business strategies to do so.¹⁷ For night clubs, for example—which must attract both men and women to be successful—a rational strategy may be to hold a “ladies night,” when women are given a discount (e.g., one free drink) and men are required to pay more (at least relatively). Similarly, Katz reasoned, a rational pricing strategy in broadband might entail offering consumers a discounted rate and requiring application providers to pay more.

Bob Blau, Vice President of Public Policy Development at BellSouth, provided an example of how that company has implemented a novel pricing strategy in a manner that benefits consumers. In particular, BellSouth sells digital subscriber line (DSL) connections at different levels of bandwidth, including connections limited to 256 kilobits

(kbps) per second downstream (and 128 kbps upstream). For such customers, downloading video programs is likely to be a difficult proposition. By virtue of a deal with Movielink, however, even 256 kbps DSL subscribers can download movies quickly because Movielink pays an additional amount to BellSouth to provide the subscriber with greater bandwidth for the sole purpose of the movie download. By analogy, suggested Kevin Kahn, Senior Fellow and Director of the Communications Technology Lab at Intel Corporation, 1-800 calls are not priced so that the customer is the only one who must pay for the connection; indeed, an industry has flourished on the premise that, for a certain type of call, customers should not be charged the full freight.

Conference participants speculated that there would and should be a variety of different business arrangements in which firms pay for quality-of-service (QoS) assurances for access to broadband or content. With regard to access to content, Bill Bailey of Disney related that ESPN 360 provides specially developed broadband content that is contractually provided to certain broadband providers. As Michael Katz of UC-Berkeley underscored, negotiation of such relationships can be complicated if government regulation leaves property rights (such as the prerogatives of broadband providers) uncertain; as the Coase theorem explains, with clearly delineated property rights and no transaction costs, parties can successfully contract around property rights to reach an economically efficient outcome.¹⁸

The participants largely concurred that different QoS arrangements and charging application providers for access to broadband on a QoS basis was a healthy and normal development in the Internet's evolution. Many participants focused on concerns that broadband providers would engage in harmful discrimination—undermining QoS—because of some form of vertical integration (either contractual arrangements or ownership in a competitive service). As a starting point for analyzing this concern, modern economic learning suggests that many vertical relationships are benign and that broadband providers often lack the incentive to engage in vertical foreclosure. In more concrete terms, said Lee Schroeder, Vice President at Cablevision, “We [at Cablevision] are all about finding complementary services that will encourage consumers” to subscribe to the company's broadband services, not about limiting what types of services can ride on their platform. Nonetheless, some firms will have the incentive and the ability to engage in an anticompet-

itive discrimination, as Madison River Communications demonstrated when it blocked Vonage's VoIP service.¹⁹

The debate on network neutrality worth having is how often abuses of market power are likely to occur and what regulatory regime should be instituted to guard against and react to any such abuses. On the side of the debate that the Internet should adhere to an architecture premised on the end-to-end principle—under which no gatekeeping or intermediary could prioritize traffic on the network—was Andrew McLaughlin of Google, who explained that such an architecture would best promote innovation. If a regulatory body such as the the Federal Trade

The debate on network neutrality worth having is how often abuses of market power are likely to occur and what regulatory regime should be instituted....

Commission (FTC) could be trusted to act swiftly and effectively to remedy any anticompetitive conduct, McLaughlin explained, he would be less committed to his “architecture as policy” perspective. In response, Michael Katz of UC-Berkeley explained that proactive regulatory programs that limit the behavior of platform providers—such as the old Financial Internet and Syndication (FinSyn) rules that limited the ability of the major networks to enter into the programming business²⁰—merely distort the market in ways that harms consumers. To address anticompetitive concerns, Katz main-

tained, the best model is the antitrust system. Adding to this point, Rob Atkinson of ITIF explained that an antitrust model (superintended by either the FCC or the FTC), along with a select number of proactive requirements related to transparency and incentives for a growing and robust level of bandwidth for best efforts connections, is the best regulatory program to address network neutrality concerns.²¹

Further discussion made clear that the essence of the debate among the conference participants revolved around whether allowing fees for quality of service (QoS) would compromise the control at the edge that historically gave rise to considerable innovation. In particular, the fear that McLaughlin and others expressed is that the QoS-assured network would crowd out the best efforts network. In particular, James Assey, Senior Minority Counsel to the U.S. Senate Committee on Commerce,

Science and Transportation, asked, “What incentives does the introduction of quality-of-service assurances have on the development of the best efforts network?” With regard to the justification for allowing QoS assurances, Katz’s argument about differential pricing in two-sided markets was coupled with the need to provide incentives for investing in greater levels of bandwidth to make the case for allowing greater freedom on the part of broadband providers.

Although most conference participants were comfortable allowing QoS assurances for a fee, there was considerable disagreement about whether such assurances should be offered on a nondiscriminatory basis. On this point, at least one broadband provider conceded that nondiscrimination requirements should apply to QoS assurances offered to that provider’s own services but argued that such restrictions should not apply to assurances offered to third-party services. Other participants suggested that nondiscrimination also

should apply to all arrangements; yet others suggested that no such oversight was appropriate. To make matters more complex, some participants noted that the entire debate begged a fundamental question: “What is the Internet?” In particular, should any relevant restrictions on QoS prioritization apply to “private network-based services” or “cable services” offered by the broadband provider? Needless to say, the participants did not reach a conclusion on this issue or the appropriate regulatory oversight of QoS arrangements more generally.

The most essential and significant policy challenge is facilitating development and deployment of new broadband technologies.

Toward Consensus Principles

Conference participants (to no one’s surprise) did not resolve the network neutrality debate. Thanks to some thoughtful work by the Economic Regulation Working Group, the discussion did develop a set of consensus principles. The first principle—as suggested above—is that the concern over “network neutrality” arises only if the market is not sufficiently competitive to ensure that broadband providers will enable all applications to operate effectively on at least some networks.

Consequently, the most essential and significant policy challenge is facilitating development and deployment of new broadband technologies, through a variety of tools, including spectrum policy reform and broadband deployment tax credits. Until new broadband pipes develop, however, there is concern that incumbent providers will abuse any market power they possess.

The second consensus principle is that the FCC's policy statement on broadband policy sets out several important rights for consumers.²² In particular, as that statement contemplates, broadband providers should

The critical area on which policy should focus is not developing categorical rules but “the policing mechanism used to address anticompetitive conduct.”

Sharon O’Leary

disclose their network management policies so that consumers can make intelligent decisions and be permitted to use the equipment they want, as well as access, download, and uphold the content they want (subject to legitimate restrictions, such as those needed to protect against spam, viruses, and offensive content).

The third consensus principle is that there is a real need for more information and greater awareness about what types of arrangements are taking hold as the Internet evolves. Regardless of whether QoS assurances by broadband providers are going to be permitted (and all indications are that they will, at least for the foreseeable future), the Internet is changing in several important ways. To track the changing nature of the Internet, there is a real need for organizations to monitor how Internet traffic is relayed across networks and what forms of prioritization are instituted.

The fourth consensus principle is that an effective regime of after-the-fact (*ex post*) enforcement is superior to a before-the-fact (*ex ante*) regime composed of prophylactic rules. Stated simply, the conference participants embraced an antitrust-like model that would enforce general principles that defined anticompetitive behavior, as opposed to an effort to specifically define through regulation all forms of anticompetitive behavior. As Sharon O’Leary, Chief Legal Officer for Vonage Corporation, explained, the critical area on which policy should focus

is not developing categorical rules but “the policing mechanism used to address anticompetitive conduct.” As noted above, however, participants were not able to reach closure on the substance of the appropriate principles, particularly with regard to the circumstances that would justify the sale of differing QoS assurances to application providers on the basis of their willingness to pay for them—leaving that issue for further evaluation and debate.

The final consensus principle is that a new institutional strategy must be developed for adjudicating relevant disputes. Notably, conference participants expressed their concern that the FCC’s institutional culture left it poorly suited for the challenges of after-the-fact competition enforcement. As Bob Blau of BellSouth put it, the FCC’s history of price regulation might incline the agency toward greater oversight of the terms and conditions of broadband services. Others, such as Michael Katz of UC-Berkeley, emphasized the agency’s lack of an enforcement mindset, as well as suitable powers for obtaining information through subpoena. Consequently, participants endorsed either a new institutional framework within the FCC (e.g., administrative law judges acting according to a specially designed mission) or delegation of appropriate oversight to the FTC or the Justice Department’s Antitrust Division.

Emerging Video Applications and Content: The New Regulatory Frontier

In reaction to Rob Atkinson’s story about the Chris Bliss video, one participant noted that the video’s use of the Beatles songs violated the Copyright Act. This reaction mirrored that of the recording industry, which sent Bliss letters in the wake of the video’s soaring popularity. In response, as the *Washington Post* reported, Bliss “diplomatically asked them for guidance and the matter was promptly dropped.”²³ Both the sending of the notice and the dropping of the matter underscore that copyright policy often does not deal well with issues such as the Bliss video; after all, where are the profits, and what is to be gained through enforcement?

The challenge for digital copyright policy is to facilitate creativity by ensuring opportunities for users to use prior works—even by paying a licensing fee—and improve on them. Thankfully, in the case of

the Chris Bliss video, the issue did not become a show stopper; in a twist of irony, former Beatle Ringo Starr posted the video on his site (although he does not own the copyright for the songs that are played in the video). Other creators are not so lucky, however.

The challenge for digital copyright policy is to facilitate creativity.

The reaction of some conference participants who are parents during Atkinson's story of how he stumbled on the video through a link in an e-mail was disturbing unease, related to the challenges of monitoring videos that kids watch after receiving e-mails from their friends. Given ever-increasing sexual predation and risks from harmful Internet applications (e.g., spyware, identity theft), the regulatory challenges of consumer protection and social regulation in the Internet age will only become more formidable. With regard to intellectual property policy and consumer protection, this report raises more questions than it answers. In both cases, however, policymakers must begin to analyze tomorrow's questions today.

The Role of Intellectual Property Law

Intellectual property law is a double-edged sword. On one side, as U.S. Representative Marsha Blackburn emphasized, upstarts and established firms alike depend on intellectual property protection to justify investment in risky ventures. For larger, established firms, those investments can be as large as those for massive research and development initiatives; for upstarts, they can involve betting the entire company on a single technology. At the same time, some upstarts (and established firms) face intellectual property litigation as a strategic tool, either to gate entry and innovation or simply to reap rewards for the company that owns the relevant intellectual property right.

Although economists continue to debate the nature of innovation and the role of intellectual property policy in encouraging it, we can rely on a few basic principles to guide policy in this area. First, in the absence of legal protection, inventions (in the case of patents) and creative works (in the case of copyright) clearly are easily appropriable by others, creating a critical role for intellectual property law to ensure that inventors and creators can reap rewards for their efforts. Second, established firms

with legacy business models—for instance, Blockbuster—clearly face an enormous challenge when “disruptive technologies” provide a means of providing a competitive service through a new technology. Often, an established company will face the “innovator’s dilemma”: whether to implement this technology or maintain the firm’s current course.²⁴ If a company chooses the latter strategy, challenging the upstart in the courts, at a regulatory agency, or both is a tempting proposition; in this regard intellectual property litigation presents one potential vehicle for limiting innovation. Famously, broadcasters used just such a strategy toward cable providers, convincing the FCC to adopt a series of onerous regulations imposed on cable operators (including program origination requirements and a ban on pay TV) that some commentators have called a “textbook example[s] of anti-competitive regulation.”²⁵

The development of copyright law for the digital age must strike an important balance in preventing and addressing piracy while providing innovators with a clear framework that will safeguard them from unwarranted legal actions that could chill investment. A principal vehicle for striking this balance is copyright law and, more specifically, the doctrine adopted by the U.S. Supreme Court in the *Grokster* case.²⁶ In *Grokster*, the Court ruled that a company that induces infringement by creating a product or service designed to benefit from piracy is liable for copyright infringement. In so doing; the Court did not address specifically, but left intact, the safe harbor rule set forth in the Sony Betamax case.²⁷ Under *Sony*, a substantial noninfringing use is sufficient to provide a safe harbor against suit. The extent to which *Grokster* affects this rule remains unclear, but copyright law clearly protect innovators—unlike *Grokster* itself—that develop products that are designed to provide a legitimate service and not to induce piracy.

To appreciate the stakes of the *Grokster* rule and its implementation, consider the case of the iPod. When the iPod was invented, it was envisioned as a new platform for distributing digital music (particularly in conjunction with iTunes). Nonetheless, any reasonably intelligent person also could anticipate that the iPod might be used to store and play pirated music. (The same could be said about the VCR.) Under *Grokster*, it seems clear that the iPod would be insulated from a legal attack. A related question—left open under *Grokster*—is whether the designer of a new product such as the iPod should be required to build in protections against piracy (at additional financial cost as well as the cost of potential-

ly degraded functionality) if such protections foreseeably help in limiting piracy. The same question can be asked of network owners. With regard to both network providers and equipment developers, many participants believed that no such requirements should be imposed as a matter of copyright law, although there might be cases in which equally effective and efficient systems are available, and in such cases, companies should take reasonable steps to avoid facilitating piracy.

Creating a New Environment for Effective Licensing

The first and most critical challenge of the new digital environment is to develop norms that respect copyrighted content. In many cases, Internet users are growing accustomed to downloading music and, increasingly, video over peer-to-peer file sharing networks (such as Bittorrent) without paying for copyrighted works. Such behavior, however, is subject to change, as Verizon's Link Hoewing explained. Notably, Hoewing recounted, students in high school plays once regularly

Educational efforts alone probably are not sufficient to combat behavior that does not respect copyright.

copied the scripts, whereas today's students—because of a concerted effort by the publishers—now respect copyrights and do not do so. This type of education campaign must be a critical part of developing a sustainable and effective copyright strategy. To do so, some participants suggested that rather than filing lawsuits seeking to shut down YouTube or MySpace for failing to police copyright laws, copyright holders should work with

those websites to undertake a concerted effort to educate users, create new markets, and shape consumer behavior. In any event, educational efforts alone, however, probably are not sufficient to combat behavior that does not respect copyright.

Creating new markets in the digital environment represents one of—if not *the*—most exciting aspects of the Internet. Before the Internet, the Chris Bliss video might have been available to a handful of individuals. Yet even with the Internet, the video could be pulled at any time—as well as forming the basis of a lawsuit seeking a significant amount of statutorily prescribed damages²⁸—on the grounds that it uses the Beatles songs

without permission. Unfortunately, for anyone who is interested in using Beatles songs or other valuable content in online videos, there may be no easy way for users and creators to gain permission.

As a first step in the effort to facilitate more user-friendly ways to work with content, policymakers should recognize that effective licensing markets are a critical part of a healthy Internet ecosystem. One important development that is beginning to promote effective licensing through a voluntary system is the advent of the creative commons license.²⁹ Such a system provides creators with a menu of options for which rights they wish to retain—for example, to be paid whenever a protected work is copied in its entirety—as well as which rights they are willing to leave in the public domain—such as the right to sample the work in any derivative work.

Policymakers should recognize that effective licensing markets are a critical part of a healthy Internet ecosystem.

As a norm of how consumers behave, many users act as if any website that does not have a specific notice claiming copyright protection allows others to copy from that website in creating their own content. The beneficial effect of this norm is that it spurs content owners to develop terms and conditions for allowing the use of their content (at whatever price and under whatever conditions they select) or otherwise be deemed to allow any use of their content. Ideally, new databases and content distributors will emerge to lower transaction costs and bring together buyers and sellers of content to enable content to be reused, revised, or repurposed.

The stakes in the effort to develop effective licensing models are high. To the extent that firms devise ways to release content that has long been locked in an “analog vault,” consumers will have new choices—not only to watch old content but to watch old content used in creative ways. This phenomenon reflects two powerful facts of Internet life: With no scarcity of shelf space, Internet providers can take advantage of “long tail” markets, and user-developed innovation represents a powerful generator of valuable content.³⁰ If a vibrant licensing market fails to develop, however, the cost to the U.S. economy and culture would be substantial. Because unlocking the vault is a win-win proposition (for

producers, such as TV broadcasters, and consumers), market forces can be expected to develop effective solutions.

Lack of an accessible system for licensing creative works also could drive creators and consumers to rely on peer-to-peer networks such as Bittorent. Such networks would provide a great deal of illegal but valuable digital content at no charge and without restrictions and thus provide a powerful incentive for content holders

Lack of an accessible system for licensing creative works also could drive creators and consumers to rely on peer-to-peer networks.

to support development of effective licensing regimes. The recording industry—as some conference participants noted—learned this lesson the hard way, and video producers are taking a variety of steps to make digital content available to consumers when they want it and how they want it.

In general, conference participants believed that incentives to create effective licensing markets and the threat of piracy were sufficient motivators that government did not need to intervene to develop a compulsory licensing model along the lines proposed by Terry Fisher and others.³¹ Such a model has a set of associated challenges, including devising and overseeing a taxation scheme over broadband connections as well as placing the government in the position of setting prices for creative content—a process that would be rife with inefficiencies. Moreover, at least in this case, there is still time for a private-sector solution to develop, as suggested by the fact that Bittorent already is striking deals with content producers (as it has already done with Time Warner) to distribute content over its peer-to-peer network. Over time, we would expect to see such developments and others, as we are already seeing in the digital music realm (e.g., with iTunes and Rhapsody).

As many conference participants emphasized, online video initiatives must learn from the experience of the recording industry in its efforts to resist the digital distribution of music. As Edgar Bronfman of Warner Music explained in introducing an agreement to work with YouTube, “Consumer-empowering destinations like YouTube have created a two-way dialogue that will transform entertainment and media forever,” and “Warner Music is embracing that innovation.”³² Notably, Warner’s reported agreement with YouTube would not only authorize

YouTube to distribute its music videos, it would authorize distribution of homemade videos for its songs. Such a strategy, if pursued more widely by the industry, would facilitate legitimate distribution avenues from the outset—as was the case in the market for ringtones, for example—and provide formidable protection against individuals resorting to piracy. To be sure, it is far from clear that the industry will pursue this strategy; some companies are reportedly evaluating the merits of copyright challenges against YouTube and other firms hosting copyrighted works (such as the Chris Bliss video).³³

One critical area for policymakers to address is that securing a license to copyrighted work often is very difficult to arrange, for legal or practical reasons. On the legal front, the situation with “orphan works” is particularly troubling given today’s Internet-enabled landscape. In the analog era, the fact that a book was out of print and in a library suggested that was the best use for it. In the digital broadband era, however, there are exciting online distribution opportunities, but if the holder of the relevant copyright cannot be found, users cannot take advantage of such opportunities. Congress is considering an array of proposals to address this issue, and conference participants strongly recommended that it be resolved—for example, by authorizing the use of orphan works after a sufficient effort has been made to search out the copyright holder and removing the heavy penalties that copyright law imposes on unauthorized copiers in such situations.³⁴

A second legal front related to the orphan works issue that some roundtable participants believe requires attention is the collateral damage caused by the practice of extending copyright terms. In the Copyright Term Extension Act, for example, Congress authorized an additional 20 years for all copyright terms. For major and still used works—such as Mickey Mouse—this law merely protects the right of copyright holders to control those creations. For unused works, however, the law prevents an enormous amount of material—including early films—from coming into the public domain. Some participants therefore suggested that, at least for any future copyright term extensions, Congress should not allow such a law to protect unused works. Congress might require, for example, that all copyright holders who wish to retain works under their control pay \$1 per year to retain control of the creative works in question.

Challenges of Digital Rights Management

Some of the most challenging issues in technology law relate to the development of digital rights management policy. In short, copyright law, and the policies it protects, does not translate easily into a digital broadband environment. In 1998, Congress enacted the Digital Millennium Copyright Act (DMCA) as a means of promoting digital distribution of content on the Internet by providing protection to owners of digital content, but some questions remain unanswered, and some observers have expressed concerns about how the DMCA operates in practice.

The first issue is whether the current regime, as structured under the DMCA, overly burdens intermediaries by requiring them to act as copyright police. Under the DMCA, all broadband providers and firms that host Internet content are required to identify users engaging in copyright infringement, and they may be required to take down content alleged to violate the Copyright Act. This regime was the product of a legislative bargain requested by Internet intermediaries (such as Internet service providers) who sought to be protected from liability both from content owners—in cases where their users are infringing copyrights—and from their users, where the intermediary acts to deal with infringement allegations brought to their attention. Congress crafted the “notice and takedown” regime to promote efficient operation of the Internet and create incentives for creators and intermediaries to work together to address online infringement.

Under the DMCA, all broadband providers and firms that host Internet content are required to identify users engaging in copyright infringement and take down content alleged to violate the Copyright Act. In terms of the operation of the “notice and takedown” regime, some observers have noted that there is a problem: Many websites do not realize their right to challenge requests to take down their content. This issue is particularly problematic in light of some studies that have shown that firms providing web hosting regularly take down content when requested to do so, even if it is clearly in the public domain. To address this issue, David Honig of the Minority Media and Telecommunications Council suggested that firms hosting websites should more effectively explain the relevant procedure and find ways to protect their users. To that end, Google posts all notice and takedown

requests sent to it (and chillingeffects.org maintains a larger repository), thereby ensuring that “sunlight can act as the best disinfectant.” Finally, some conference participants believed that lawsuits like the one brought against Diebold for abusing the notice and takedown procedure also may help address this issue.³⁵

A more forward-looking concern is whether network providers will be required to implement new technologies to police infringement. Such technologies, such as deep packet inspection, might be regarded by content owners as an effective tool to fight piracy. Kevin Kahn of Intel counseled against such a step, however, explaining that there are a variety of ways to move information through encryption. Moreover, such technologies would not only add expense, they also would undermine one form of Internet nondiscrimination: Not knowing whether a packet is carrying different types of content is a protection against control by the network owners. Finally, participants agreed, mandating technologies is a dangerous step for government to take, and such steps should not be taken without very compelling justification.

Another forward-looking concern is how the analog concepts of the first sale and fair use doctrines will be implemented in the digital world. Under the first sale doctrine, for example, Netflix is free to develop a business based on sending out DVDs via U.S. mail. In the digital broadband environment, however, there is no such mechanism for Netflix to purchase and own content (which would be provided by a license). This form of control over content could be problematic to the extent that the movie industry establishes relationships with a particular distribution model (as they did with Blockbuster) and is reluctant to make the content available in digital form. In practice, however, a variety of content providers are licensing multiple platforms and multiple forms of distribution. In any event (and in part because of the novelty of the issue), conference participants were not able to develop any particular proposals on this issue.

Participants discussed briefly how digital rights management (DRM) regimes could protect “fair use,” which courts traditionally have protected through after-the-fact adjudication, in a digital age in which limitations on use could be built in. As Bill Bailey suggested, firms may want and need to respect consumer behavior. Such commercial pressures however have not been the sole protection in the analog world; thus, some observers have raised concerns that they might not be suffi-

cient in the digital world. One measure that seeks to protect fair use in a digital era is the so-called Boucher Bill, which would revise the DMCA to legalize circumvention technologies that enable noninfringing uses of content. This legislation, however, has raised significant concerns among creators of content that such changes would effectively repeal the DMCA's core protections and thereby undermine the purposes

Commercial pressures have not been the sole protection in the analog world; they might not be sufficient in the digital world.

underlying its enactment. Conference participants did not discuss DRM issues more generally, but they recognized that several other important issues will need to be addressed, including questions related to consumer protection, compatibility between DRM systems, and enabling consumers to use digital content in creative ways.³⁶

Finally, conference participants addressed the question of whether the FCC should be placed in the role of managing copyright policy in the form of the broadcast flag regime. One fundamental concern about

such a regime is that government must not mandate technologies or empower private industry to set technologies enforced by government. The original broadcast flag regime proposed by the Motion Picture Association of America (MPAA) did just that, but the FCC prudently adopted a model in which it would assess, on a case-by-case basis, whether a technology sufficiently protected digital content from unauthorized redistribution.³⁷ In practice, this regime even approved some controversial technologies, such as the Tivo To Go system. Nonetheless, participants remained concerned—as in the network neutrality case—that the FCC would be too susceptible to making judgments on the basis of political considerations (as opposed to the technical merits). Others complained that even in concept, the regime was fatally flawed.

Patent Law

The final frontier of intellectual property policy is the development of patent law. Recently a twin set of critical reports—by the FTC and the National Academies of Sciences³⁸—have catalyzed a congressional debate on the topic of patent reform. Although the conference did not

focus on this issue nearly as closely as the digital copyright issues, participants concluded that a well-functioning patent system is required to protect legitimate inventors and that the current U.S. model is rife with abuses. In particular, participants expressed concern that the current system had given rise to opportunities for firms to abuse the system and engage in strategic behavior that is related not to legitimate business development but solely to extract royalties. This behavior ranges from the conduct of “patent trolls,” who might purchase patents out of bankruptcy with the sole intention of using them to extract payments from manufacturers, to firms such as Rambus, which apparently disregarded the norms of a cooperative standard-setting body and sought patent protection that could be used to “shake down” companies that adopted the relevant standard.³⁹ Without more careful analysis of the relevant issues, however, participants did not embrace any specific recommendations, although many recognized that the system is seriously flawed and in need of reform. Others noted that in evaluating what sorts of reforms are warranted, policymakers must ensure that the patent system continues to serve its core purpose of rewarding technological innovation and that any proposed changes, in the name of “reform,” do not limit patent protection to such an extent that valid inventions are no longer sufficiently protected.

The primary role of government in regulating access to information and content should be to empower users.

Social Regulation

Cyberspace can be a dangerous place. “Don’t talk to strangers,” for example, or “don’t watch certain channels” are admonitions that parents cannot easily teach with regard to a medium that brings individuals and content from all over the globe to one’s home computer screen. In short, conference participants recognized that the world of MySpace—an easily accessible platform for information sharing between users—provides enormous challenges to parents and regulators alike.

As a primary strategy for addressing these channels, participants embraced the basic philosophy that the primary role of government in regulating access to information and content should be to empower

users—in their roles as parents and consumers—so that they can protect themselves effectively against what is broadly called “malware” and offensive content. (Malware is a contraction of the term “malicious software” and includes a range of dangerous programs, such as spyware, rootkits, and worms.) As Brent Bozell, Founder and President of the Parents Television Council and Founder and President of the Media Research Center, put it, key companies must embrace “self-regulation as a strategy to prevent the FCC and FTC from engaging in command-and-control regulation” of the Internet’s content.

The Realities of Internet-Delivered Content

The challenges of cyberspace are increasingly being met by increasingly savvy Internet users. As consumer behavior indicates, antivirus software is increasingly recognized as a “must have” product.⁴⁰ Yet parental controls are still in an early stage of adoption.

Conference participants did not rule out direct government regulation of harmful content such as fraud, spam, viruses, phishing schemes, and child pornography, but they concluded that direct government regulation invariably will face formidable difficulties and is a second-best strategy. Notably, regulating speech in the Internet environment is becoming increasingly difficult because of the decentralized nature of the Internet and its international reach. Consequently, participants—with the aid of a thoughtful Working Group report on the subject—developed a strategy that is based on educating users and promoting self-regulation.

The first principle of a user education program would involve accurate labeling of content. Without a system of accurate and comprehensive labeling of broadband content, users will be unable to manage their own Internet use effectively, let alone that of their children. Moreover, a system of content labeling also is fundamental to prevention of deceptive practices and the notion of truth in representations (e.g., representations regarding broadband use). Indeed, precisely this model gave rise to the Internet privacy program overseen by the FTC whereby companies post privacy policies and the FTC ensures that they comply with their promises to protect private information.⁴¹

In terms of developing a ratings regime for Internet content, the Internet Content Ratings Association (ICRA) is already developing such a model. Ideally, this scheme (or another such effort) will succeed in

harmonizing the ratings system across all types of content delivery, including movie theatres, video games, broadcasting, cable, and Internet video. To work effectively, the labeling system must be well understood by consumers, use effective and user-friendly technology, and reach critical mass (on the part of both users and content providers).

The second principle for an effective strategy is that educational institutions and governmental organizations must develop curricula related to technological literacy. These literacy skills should be geared to both adults and children. At a minimum, such materials would educate Internet users about the risks of identity theft and social networking (including, for example, the proliferation of sexual predators online) and point them to other materials relating to media and Internet literacy for parents and children developed by government and industry.

Conference participants recognized that the foregoing two principles are far from perfect and would require a series of refinements to work in practice. They recognized that there is a considerable amount of content created internationally and that, for any system to be ideally effective, it would need to be adopted internationally. Second, they recognized that one of the Internet's great attributes is user-developed content, including "mash-ups" that combine existing content in creative ways, which may be difficult to rate. Third, they recognized that many sites will simply decline to rate their content at all; as long as a critical mass of sites do so, however, consumers will still be able to use a content rating system and access a wide variety of content.

Conference participants recognized that a particularly important challenge is to develop an effective enforcement mechanism. In any system of self-regulation, enforcement is always bound to be a challenge because industries sometimes do not relish policing themselves. In the context of Internet privacy, the FTC played an important role by encouraging firms to develop and post privacy policies and then enforcing the content of those policies. An alternative model, which some participants recommended, would operate along the lines of spam filters. As Andrew McLaughlin of Google related, Google's e-mail system

Educational institutions and governmental organizations must develop curricula related to technological literacy.

uses feedback from users to label spam and treat it as such for other users. In theory, a similar regime could be used to identify unauthorized copyrighted material on the Internet.

Despite the formidable challenges, conference participants believe that government and stakeholder partnership can develop reasonably effective strategies for content regulation and consumer protection. The beginning of such an effort should be development of a system of best practices that could guide parents and content providers. Such best practices could include increased reliance on “safe havens”—providers who offer content that is appropriate for children. It also would include efforts to educate consumers about unlabeled “edge” or “peer-to-peer” communications, such as the FTC’s model literacy and iSafe programs.

Although development by Congress of a comprehensive regulatory regime for Internet content would be premature and counterproductive, conference participants also believe that there are important measures that should be adopted as soon as possible. Initially, Congress should enact legislation to enhance the ability of domestic law enforcement agencies to bring enforcement actions dealing with instances of Internet malfeasance by organizations or individuals operating outside the United States. In so doing, Congress would empower the FTC and other appropriate domestic agencies to share confidential information with their foreign counterparts regarding activities such as “phishing,” spyware, and spam. Second, Congress should enhance the FTC’s ability to impose civil penalties for “unfair or deceptive acts or practices” that cause harm to consumers—for example, by strengthening the Commission’s statutory authority to impose fines or by easing its rulemaking burdens.

Regulating Content in a New Environment

Issues relating to social regulation underscore an insight that will increasingly haunt policymakers: The Internet will continue to undermine the legacy of content regulation that developed in response to specific technologies. With regard to broadcast television, for example, the FCC initially developed rules to promote children’s programming. In the face of new distribution technologies—starting with cable TV and constantly increasing as a result of Internet technology—it is difficult to invoke scarcity as a rationale for forcing broadcasters to provide certain types of programming. Moreover, to the extent that any content regu-

lations should apply to broadcasters, it is difficult to justify not applying those same regulations to identical programming delivered over different distribution platforms—for example, cable televisions or Internet-enabled downloads to iPods. In short, the silo-based legacy of content regulation (see Appendix A) is impossible to justify and should be reformed.

A critical challenge of the broadband era—particularly significant with regard to social regulations applied to video programming—is to recognize where the emerging marketplace casts doubt on many longstanding regulatory policies. In this category, for example, we should evaluate the evolving role of public, educational, and governmental channels in the age of YouTube.⁴² Similarly, we should evaluate the proposal for an a la carte mandate for cable television channels, with an appreciation that the Internet is in the beginning stages of revolutionizing the video marketplace.

Conference participants recognized that several social policy goals should be advanced in the broadband video era. They noted, for example, that concerns relating to a variety of issues—such as ensuring protection of children, access for people with disabilities, and emergency alert systems—must be thoughtfully addressed. A thoughtful approach to such issues, however, means that policymakers evaluate what strategies make sense given the Internet’s architecture and course of development. In particular, policymakers should appreciate the unique attributes of Internet-based video distribution—including the fact that the Internet is increasingly “designed to overcome geography, not track it”⁴³—and avoid adopting policies that undermine its potential. Some incumbents might propose such policies (e.g., requirements of local programming) as a means of self-preservation, as broadcasters did in response to the rise of cable television. In the Internet context, however, such policies could backfire because attempts to impose onerous regulations might stifle innovation from legitimate firms and encourage efforts to provide similar services from offshore servers, leading to an ongoing game of cat-and-mouse if regulatory authorities were to impose such policies.⁴⁴

A critical challenge of the broadband era is to recognize where the emerging marketplace casts doubt on many longstanding regulatory policies.

Conclusion

In general, the proliferation of content created by users or made accessible on the Internet is an exciting development that policymakers should encourage. Such content also raises significant risks that warrant careful oversight. Transformation of video markets is going to take time, giving policymakers an opportunity to adjust to and prepare for a new reality. As with the transformations of the music and voice industries, the impact of the Internet will undermine many established policies and thus provide an important opportunity to focus on which questions really matter.

As this report suggests, a fundamental question is how to support development and deployment of broadband and ensure that all sorts of applications are able to compete in a broadband-enabled video environment. To spur competition and creativity in this area policy makers should examine copyright and patent law to ensure that each is facilitating a market for legitimate creative works and fostering creativity (as opposed to stifling it). Finally, without careful planning, users are likely to be left in a bind with regard to how to protect themselves and their children from dangerous and offensive content in a world of video plenty.

Notes

1. David Segal, "A Stand-Up Guy Happily Juggles His Passions," *Washington Post* (April 11, 2006), C1. The video is posted at <http://video.google.com/videoplay?docid=4776181634656145640>.
2. See <http://video.google.com/videoplay?docid=-6283096511750618839>. In a play on Oscar Wilde's famous quote, Siva Vaidyanathan remarked that "the only thing worse than being sampled [in the online world] is not being sampled"; quoted in David Bollier, *When Push Comes to Pull: The New Economy and Culture of Networking Technology* (Washington, D.C.: Aspen Institute, 2006), 37.
3. Heather Green, "Whose Video Is It, Anyway?" *Business Week Online* (August 7, 2006), available at http://www.businessweek.com/magazine/content/06_32/b3996051.htm.
4. Richard Siklos, "A Video Business Model Ready to Move Beyond Beta," *New York Times* (September 17, 2006), available at http://www.nytimes.com/2006/09/17/business/your-money/17frenzy.html?_r=1&oref=login.
5. Carol Wilson, "VON: TV over IP About to Explode," *Telephony Online* (September 12, 2006), available at http://telephonyonline.com/iptv/marketing/iptv_pulver_leonsis_091206. *The Economist* offered a slightly less confident outlook, though with the same bottom line:

Whether or not convergence turns out to merit the hype, the industry has convinced itself that it is worth pursuing, and anyone who disagrees risks being left behind. "As soon as one operator adopts convergence, all the others have to follow," says Mr. Lombard [Chairman of France Telecom]. Quite how far and how fast the process will go remains to be seen. But like it or not, convergence is coming.

- "Your Television Is Ringing," *The Economist*, Survey: Telecoms Convergence (October 12, 2006), available at http://www.economist.com/surveys/PrinterFriendly.cfm?story_id=7995312.
6. Chris Anderson, "The Long Tail," *Wired* (2005), available at <http://www.wired.com/wired/archive/12.10/tail.html>.
 7. Bollier, *When Push Comes to Pull*, 35. For a lengthier explanation of the user-based innovation phenomenon, see Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (New Haven, Conn.: Yale University Press, 2006); Eric von Hippel, *Democratizing Innovation* (Cambridge, Mass.: MIT Press, 2005).
 8. Joshua Chaffin, "Disney's iTunes Sales Hit 125,000," *Financial Times* (September 19, 2006), available at <http://www.ft.com/cms/s/3cc773fc-481b-11db-a42e-0000779e2340.html>.
 9. Daisuke Wakabayashi, "Microsoft Eyes Another Change to Be A TV Player," *Washington Post* (October 13, 2006).
 10. Cf. Cass Sunstein, *Republic.com* (Princeton: Princeton University Press, 2002); Richard Posner, "Bad News," *N.Y. Times Book Review* (July 31, 2005), available at <http://www.nytimes.com/2005/07/31/books/review/31POSNER.html?ei=5090&en=4f8754ed897bdb1b&ex=1280462400&pagewanted=print>.

11. See Clay Shirky, "Power Laws, Weblogs, and Inequality," 2003, available at http://www.shirky.com/writings/powerlaw_weblog.html, particularly the link to Albert-Laszlo Barabasi.
12. John Waclawsky, "IMS 101: What You Need to Know Now," *Business Communications Review* (June 15, 2005), available at http://www.bcr.com/carriers/public_networks/ims_101_what_need_know_now_2005061514.htm.
13. Andrew Odlykzo, "The Many Paradoxes of Broadband," *First Monday* (July 31, 2003), available at http://www.firstmonday.org/issues/issue8_9/odlykzo.
14. See S. Derek Turner, "Broadband Reality Check II: The Truth Behind America's Digital Decline" (Free Press, 2006), available at <http://www.freepress.net/docs/bbrc2-final.pdf#search=%22Broadband%20Reality%20Check%22>.
15. A chart of broadband rankings, as calculated by the ITU, is set out at <http://www.itu.int/osg/spu/newslog/ITU+Broadband+Statistics+For+1+January+2006.aspx>. For an analysis of the rankings, see Robert Atkinson, "U.S. Continues to Tread Water in Global Broadband Adoption," ITIF Policy Brief (April 12, 2006), available at <http://www.itif.org/files/occd-article1.pdf>.
16. For an overview of the current regulatory program for supporting universal service, see Jonathan E. Nuechterlein and Philip J. Weiser, *Digital Crossroads: American Telecommunications Policy in the Internet Age*, chapter 10 (Cambridge, Mass.: MIT Press, 2005).
17. For a discussion of the two-sided markets phenomenon and its implications, see Jean Charles Rochet and Jean Tirole, "Two Sided: An Overview" (March 12, 2004), available at http://faculty.haas.berkeley.edu/hermalin/rochet_tirole.pdf.
18. See R. H. Coase, "The Problem of Social Cost," *Journal of Law and Economics* 3, no. 1 (1960), 15-19.
19. For an explanation of why firms often will not have an incentive to engage in vertical foreclosure (or monopoly leveraging) in applications markets, as well as exceptions to this rule, see Joseph Farrell and Philip J. Weiser, "Modulation, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age," *Harvard Journal of Law and Technology* 17, no. 1 (fall 2003), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=452220. For the Madison River decision, see Madison River Communications LLC, Consent Decree, 20 FCC Rcd 4,295 (March 3, 2005), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-05-543A2.pdf.
20. Those rules were invalidated, on the basis that they lacked a coherent economic justification, in *Schurz Communications v. FCC*, 982 F.2d 1043 (7th Cir. 1992).
21. See Robert D. Atkinson and Philip J. Weiser, "A Third Way on Network Neutrality" (May 30, 2006), available at <http://www.itif.org/files/netneutrality.pdf>.
22. *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, Federal Communications Commission Policy Statement, 20 FCC Rcd 14,986 (2005), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-05-151A1.pdf. This statement borrowed heavily from an earlier policy pronouncement by former FCC Chairman Michael Powell. See Michael K. Powell, "Preserving Internet Freedom: Guiding Principles for the Industry," *Journal on Telecommunications and High Technology Law* 3, no. 5 (2004), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-243556A1.pdf

23. Segal, "A Stand-Up Guy Happily Juggles His Passions."
24. See Clayton M. Christensen, *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail* (Cambridge, Mass.: Harvard Business School Press, 1997).
25. Thomas W. Hazlett, "The Wireless Craze, The Unlimited Bandwidth Myth, the Spectrum Auction Faux Pas, and the Punchline to Ronald Coase's 'Big Joke': An Essay on Airwave Allocation Policy," *Harvard Journal of Law and Technology* 14 (2001), 335, 419; see also Stan Besen and Robert Crandall criticizing early regulation of cable television in "The Deregulation of Cable Television," *Law and Contemporary Problems* 44 (1981).
26. See *MGM Studios, Inc. v. Grokster, Ltd.*, 125 S. Ct. 2764 (2005).
27. *Sony Corp. of America v. Universal City Studios, Inc.*, 464 U.S. 417 (1984).
28. See 17 U.S.C. § 504(c) (providing for statutory damages ranging from \$750 to \$150,000 per act of infringement).
29. For more information about creative commons licenses, see <http://wiki.creativecommons.org/FAQ>.
30. See Chris Andersen, *The Long Tail: Why the Future of Business is Selling Less of More* (New York: Hyperion, 2006); von Hippel, *Democratizing Innovation*.
31. Terry Fisher, *Promises to Keep* (Stanford: Stanford University Press, 2004).
32. See http://www.youtube.com/press_room_entry?entry=vCfgho5_Fb4.
33. See Yinka Adegoke, "Universal Music Pressuring YouTube, MySpace," Reuters (September 13, 2006), available at http://today.reuters.com/misc/PrinterFriendlyPopup.aspx?type=internetNews&storyid=2006-09-14T013359Z_01_N13130884_RTRUKOC_0_US-MEDIA-UNIVERSALMUSIC-YOUTUBE.xml&src=rss (reporting on comments from Universal Music Group's chief executive: "We believe these new businesses are copyright infringers and owe us tens of millions of dollars").
34. Too often, copyright law itself tends to be a fairly crude tool—either allowing use of a copyrighted work (as a fair use or noninfringing use) or banning it altogether and imposing statutory damages that can put a firm out of business. This was the case for MP3.com, for example. See *UMG Recordings, Inc. v. MP3.com, Inc.*, 92 F.Supp.2d 349 (S.D.N.Y. 2000).
35. See *Online Policy Group v. Diebold Inc.*, 337 F. Supp. 2d 1195 (N.D. Cal. 2004).
36. For a report addressing these issues, see <http://www.cdt.org/copyright/20060907drm.pdf>.
37. For the original decision, see *Digital Broadcast Content Protection*, 18 FCC Rcd. 23550 (2003), *rev'd*, *American Library Association et al. v. FCC*, 406 F.3d 689 (D.C. Cir. 2005), available at <http://pacer.cadc.uscourts.gov/docs/common/opinions/200505/04-1037b.pdf>. For an assessment of the regime, see Center for Democracy and Technology, *Implications of the Broadcast Flag: A Public Interest Primer*, available at <http://www.cdt.org/copyright/20031216broadcast-flag.pdf>.
38. *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy* (Washington, D.C.: Federal Trade Commission, 2003), 5; Stephen A. Merrill, Richard C. Levin,

- and Mark B. Myers eds., *A Patent System for the 21st Century* (Washington, D.C.: National Academies Press, 2004). For a critique of the current system, see Adam B. Jaffe and Josh Lerner, *Innovation and Its Discontents: How Our Broken Patent System is Endangering Innovation and Progress and What To Do about It* (Princeton, N.J.: Princeton University Press, 2004).
39. *In the Matter of Rambus, Inc.*, Opinion, Docket No. 9302 (August 2, 2006), available at <http://www.ftc.gov/os/adjpro/d9302/060802commissionopinion.pdf>.
40. Forrester's NACTAS Q1 2006 Devices & Access Online Survey indicates that a majority of computer users are now protecting their primary home computers with such security measures as antivirus software and spam blockers.
41. For a discussion of this system, see Steven J. Hetcher, "The FTC as a Privacy Norm Entrepreneur," *Vanderbilt Law Review* 53 (2000), 2041.
42. For a first-rate discussion of tailoring media policy to new digital realities, see Ellen P. Goodman, "Media Out of the Box," *Berkeley Technical Law Journal* 19 (2004), 1389.
43. Vonage Holding Companies Petition for Declaratory Ruling Concerning an Order of the Minnesota Public Utilities Commission, *Memorandum Opinion and Order*, 19 FCC Rcd 22,404 ¶ 25 (2004); see also Douglas Sicker, "The End of Federalism in Telecommunications Regulation?" *Northwestern Journal of Technology and Intellectual Property* 3 (2005), 130, available at <http://www.law.northwestern.edu/journals/njtip/v3/n2/3>.
44. Chris Marsden's recent report for RAND Europe describes this issue as follows:
- Incumbents with strongly-integrated value chains can view such regulation as a source of protective cost-based entry barriers. Instead, potential market entrants would choose offshoring, "flag of convenience" locations, entry by affiliation with incumbents or investment in other sectors altogether. In particular, game industry developers and others are a "movable feast," which can be transferred between regions or substituted with some ease if market conditions dictate.... Venture capitalists have strong preferences for markets that permit innovation without regulatory approval or sanction.
- Chris Marsden et al., *Assessing Indirect Impacts of the EC Proposals for Video Regulation* (Santa Monica, Calif.: RAND Corporation, 2006), 141, available at www.ofcom.org.uk/research/tv/reports/videoregulation/videoregulation.pdf.

APPENDIX

Anomalies of Video Regulation: Treating Like Services Differently

Video services have a legacy of uneven regulation. This table illustrates the stark differences in burdens the government has placed upon the various video technologies over the years.

Regulations/Restrictions	Broadcast	Cable	DBS	Internet	Mobile Video
Public Interest Programming	<p>47 U.S.C. § 307(b) 47 C.F.R. § 73.3526 Broadcasters are required to operate in the public interest in order to maintain their licenses. The public interest standard has been interpreted in different ways over the years; currently, responsibilities are somewhat unsettled, especially with respect to digital television broadcasting.</p> <p>At the least, broadcasters are required to maintain a public inspection file containing an "issues/program list" that lists the programs aired by the broadcaster that significantly address community issues. Stations must update these lists quarterly.</p>	<p>Content Requirements 47 U.S.C. §543(b)(7) 47 C.F.R. § 76.901(a) As part of the franchise agreement, local franchise authorities (LFAs) are permitted to demand that cable operators provide channel capacity for the carriage of public, educational, or governmental (PEG) programming, as well as financial support for the production of such programming.</p>	<p>47 U.S.C. § 335(b) 47 C.F.R. § 25.701(f) Four percent of a DBS provider's channel capacity must be reserved for educational or informational programming (the statute permits the FCC to set the reserved amount at between 4--7 percent). This channel capacity must be made available to non-commercial programmers at rates that do not exceed costs that are directly related to making the capacity available.</p>	<p>No similar requirement applies.</p>	<p>No similar requirement applies.</p>
Children's Programming	<p>47 U.S.C. §§ 303a, 303b, 609 note. 47 C.F.R. §§ 73.671, 73.4050 Broadcasters have an affirmative duty to provide educational and informational programming for children. Although no strict threshold is prescribed, the FCC notes that a broadcaster that provides 3 hours of such programming per week will be considered in compliance. Broadcasters also have an obligation to inform viewers as to the availability of children's educational programming.</p> <p>47 C.F.R. §§ 73.670, 73.4050 Broadcasters must limit the amount of commercial time</p>	<p>47 U.S.C. §§ 303a, 303b, 609 note. 47 C.F.R. § 76.225 Cable operators must limit the amount of commercial time during children's programming as follows: 10.5 minutes per hour on the weekends and 12 minutes per hour on weekdays. Cable operators also must limit the display of website addresses during children's programming.</p> <p>Cable operators, however, are not responsible for ensuring compliance with the rules for programs aired on broadcast channels or leased access or PEG channels over which the cable operator may not exercise editorial control. Cable operators</p>	<p>47 U.S.C. § 335(b) 47 C.F.R. § 25.701(e) DBS is subject to the same limits as cable. However, this requirement does not apply to programs aired on a broadcast channel carried by the DBS provider or over any channel noncommercial, educational and informational programming it is required to carry and over which it does not have editorial control. DBS providers are responsible for ensuring the compliance of any satellite network programming.</p>	<p>15 U.S.C. §§ 6501-03 Operators of websites or online services directed to children may not collect personal information from a minor under the age of thirteen without express consent from the child's parent. Any operator that chooses to obtain parental consent must</p>	<p>No similar requirement applies.</p>

Prepared by Joe Waz (Comcast Corporation) and Grace Koh, Stephanie Podey, Ryan Wallach, and Jim Casserty (Wilkie Farr & Gallagher LLP). Version 1.2 October 2006.

Regulations/Restrictions	Broadcast	Cable	DBS	Internet	Mobile Video
	during children's programming. 10.5 minutes per hour on the weekends and 12 minutes per hour on weekdays. Additionally, broadcasters must separate commercials and program content by use of special measures such as "bumpers." Moreover, there are strict limits on airing commercials for a product in conjunction with a program that features the product. The FCC also limits the display of website addresses during children's programming.	are responsible for ensuring the compliance of cable network programming.		abide by strict disclosure rules and allow a parent to discontinue his or her consent for the operator's continued collection or use of the child's personal information.	
Political Broadcasting	47 U.S.C. §§ 312(a)(7), 315 47 C.F.R. §§ 73.1941, 73.1940-44, 73.4185 Broadcasters must permit a legally qualified candidate for federal public office to use their broadcast facilities. Broadcasters must allow equal opportunities for other candidates for the same office to use the facilities. A broadcaster may not charge candidates more than it charges its most favored commercial advertisers for the same classes and amount of time for the same period.	47 U.S.C. §§ 315 47 C.F.R. §§ 76.205-09 Cable operators are not required to permit legally qualified candidate for public office to use their cablecast facilities. ¹ But, if they do so, all other candidates for the same office must be given equal opportunities to use the facilities. Cable operators may not censor any content a candidate chooses to air. A cable operator may not charge candidates more than it charges its most favored commercial advertisers for the same classes and amount of time for the same period.	47 U.S.C. §§ 312(a)(7), 315, 335 47 C.F.R. § 25.701(b)-(c) DBS providers must permit a legally qualified candidate for federal public office to use their facilities. ² DBS providers must allow equal opportunities for other candidates for the same office to use the facilities. DBS providers may not edit or alter such use by a candidate.	2 U.S.C. §§ 431(g)(B)(iii), 431(17), 441(d)(a) 11 C.F.R. §§ 100.26, 100.29(c), 110.11 Certain disclosure obligations are imposed on candidates, campaigns, and other organizations supporting a candidate, but not on the Internet provider. For example, electronic	2 U.S.C. §§ 431(g)(B)(iii), 431(17), 441(d)(a) 11 C.F.R. §§ 100.26, 100.29(c), 110.11 Certain disclosure obligations are imposed on candidates, campaigns, and other organizations supporting a candidate, but not on the Internet provider. For example, electronic

¹ Cablecasting is defined as "programming (exclusive of broadcast signals) carried on a cable television system." 47 C.F.R. § 76.5(o).

² In re *Implementation of Section 25 of the Cable Television Consumer Protection and Competition Act of 1992*, *Direct Broadcast Satellite Public Interest Obligations*, Memorandum Opinion & Order on the Reconsideration of the First Report & Order, 19 FCC Rcd. 5864 ¶ 26 (2004).

Regulations/Restrictions	Broadcast	Cable	DBS	Internet	Mobile Video
<p>broadcasting, Public Notice (rel. Jun. 19, 1978). Broadcasters are also required to ensure that advertising by candidates for federal office contains clear identification of the sponsors of the advertisement.</p> <p>47 U.S.C. § 315(e) Broadcasters (broadly defined to include cable operators) are required to maintain a public inspection file of all requests to purchase air time made by a legally qualified candidate or that communicates a message relating to any political matter of national importance, including messages related to a legally qualified candidate, any Federal election, or a national legislative issue of public importance.</p> <p>Personal Attack and Political Editorial Rules</p>	<p>No similar requirement applies.</p>	<p>all candidates the information about its rates, terms, conditions, and all value-enhancing discount privileges offered to other advertisers.</p> <p>In the event that a cable operator receives film, record, transcription, talent, script, or other material service for a political cablecast, the cable operator must announce the true identity of the sponsor at both the beginning and the end of the cablecast material.</p> <p>47 U.S.C. § 315(e) Cable operators have the same public file requirement as broadcasters with respect to requests for time for political messages.</p>	<p>No similar requirement applies.</p>	<p>communications must contain clear and conspicuous disclaimers identifying the person paying for the communication and whether authorized by the candidate or paid for by another entity.</p>	<p>No similar requirement applies.</p>
	<p>In 2000, the Commission was ordered by the D. C. Circuit to repeal its personal attack and political editorial rules as to both broadcasters and cable operators. Although the FCC repealed the personal attack and political editorial rules contained in 47 C.F.R. §§ 76.209(b), (c), and (d), it appears to have neglected to delete the similar provisions in 47 C.F.R. §§ 76.1612-13.</p> <p>47 C.F.R. § 76.1612 requires a cable operator to permit persons who are subject to a personal attack transmitted over its cablecast facilities an opportunity to respond. 47 C.F.R. § 76.1613 states that, if a cable operator transmits its own endorsement of or opposition to a candidate, the</p>	<p>No similar requirement applies.</p>	<p>No similar requirement applies.</p>	<p>No similar requirement applies.</p>	<p>No similar requirement applies.</p>

Regulations/Restrictions	Broadcast	Cable	DBS	Internet	Mobile Video
Sponsorship Identification (Payola)	<p>47 U.S.C. § 317 47 C.F.R. § 73.1212</p> <p>Whenever a broadcaster airs material for which it receives money, service, or other valuable consideration, it must fully and fairly disclose the true identity of the sponsor.</p>	<p>47 U.S.C. § 76.1615</p> <p>When a cable operator originates a cablecast presenting any material for which it receives money, service, or other valuable consideration, the cable operator must disclose the true identity of the sponsor.</p>	<p>No similar requirement applies.</p>	<p>No similar requirement applies.</p>	<p>No similar requirement applies.</p>
Closed Captioning	<p>47 U.S.C. § 613 47 C.F.R. §§ 79.1-79.2</p> <p>Broadcasters are required to provide closed captioning for the hearing impaired on a phased-in basis: as of January 1, 2006, all new nonemergency programming, including as hazardous weather and dangerous community situations, must be captioned; for programming that was originally aired prior to January 1, 1998, currently 30 percent of such programming must be captioned and after January 1, 2008, 75 percent must be captioned.</p>	<p>47 U.S.C. § 613 47 C.F.R. §§ 76.606, 79.1-79.2</p> <p>With certain exceptions, cable operators have the same captioning requirements with respect to cable programming as broadcast stations. They also are required to ensure that their equipment can transmit closed-captioning data without alteration. They are not required to provide closed captioning for programming that, by law, is not subject to their editorial control, such as the signals of television broadcast stations, programming involving candidates for public office, or commercial leased access and PEG programming. Cable operators are responsible for ensuring the compliance of cable network programming.</p>	<p>47 U.S.C. § 613 47 C.F.R. §§ 79.1-79.2</p> <p>Requirements are identical to those for cable.</p>	<p>No similar requirement applies.</p>	<p>No similar requirement applies.</p>
Obscenity/Indecency	<p>18 U.S.C. § 1464 47 U.S.C. §§ 73.3999, 73.4165, 73.4179</p> <p>Broadcasters may not air obscene material. Nor may they air indecent or profane material between 6:00 AM and 10:00 PM.</p>	<p>18 U.S.C. § 1468 47 U.S.C. § 559</p> <p>Cable operators may not distribute obscene material.</p> <p>47 U.S.C. § 560</p> <p>Cable operators must scramble or block any channel that a customer does not subscribe to and that the customer requests to</p>	<p>18 U.S.C. § 1468</p> <p>DBS providers may not distribute obscene material.</p>	<p>18 U.S.C. § 1462</p> <p>The transmission of obscene materials prohibited by Federal criminal statutes and individual state</p>	<p>Requirements are identical to those for Internet.</p>

Regulations/Restrictions	Broadcast	Cable	DBS	Internet	Mobile Video
		<p>have blocked.</p> <p>47 U.S.C. § 544(c)(2) Cable operators must provide subscribers with a device by which the subscriber can prohibit viewing of a particular cable service during times selected by the subscriber.</p> <p>47 U.S.C. § 544(c)(3)(A) Cable operators must provide subscribers advance notice of free promotions of premium programming and block these channels upon a customer's request.</p>		<p>obscenity laws.</p> <p>No current law deals with pornography on the Internet.³</p>	
Tobacco Advertising	<p>15 U.S.C. §§ 1335, 1338-39, 4402 47 C.F.R. § 73.4055 Cigarettes, "little cigars," and smokeless tobacco may not be advertised on any medium of electronic communication subject to the jurisdiction of the FCC. The provision is enforced by the U.S. Department of Justice. Although the statutory language arguably prohibits tobacco advertising on the Internet, the statute was enacted in the 1970s, well before the development of the Internet, and the courts do not appear to have addressed the issue of whether the statute applies to the Internet.</p>				
Lotteries	<p>18 U.S.C. §§ 1304, 1307 47 C.F.R. § 73.1211 Except in limited circumstances, broadcasters are prohibited from transmitting any advertisement or information concerning lotteries, gifts, and so forth that are dependent in whole or in part on lot or chance.</p> <p>As of 1999, the rule and statute is interpreted to permit advertisements for lawful casino gambling, regardless of whether the broadcaster that transmits the advertisement is located in a state which</p>	<p>18 U.S.C. §§ 1304, 1307 Restrictions are identical to broadcast restrictions.</p>	<p>Whether the same prohibitions apply to DBS is uncertain. No regulation specifically prohibits the transmission of lottery information or gambling information via satellite. However, 18 U.S.C. § 1304 applies more broadly to "Whoever broadcasts by means of any radio or television station for which a license is required by any law of the United States." Thus, regulations is sufficiently broad to include DBS.</p>	<p>There is significant uncertainty as to the application of federal gambling law to the Internet. Although Congress recently passed a bill that would prohibit credit card companies from processing payments to online gambling companies.</p>	<p>The state of law is uncertain.</p>

³ See *Ashcroft v. ACLU*, 542 U.S. 656 (2004) (striking down the Child Online Protection Act of 1998), *Reno v. ACLU*, 521 U.S. 844 (1997) (striking down the Internet provisions of the Communications Decency Act of 1996).

Regulations/Restrictions	Broadcast	Cable	DBS	Internet	Mobile Video
	permits casino gambling or a state which prohibits it. ⁴			regulations have yet to be adopted and it is not entirely clear how the law will be implemented.	
Promotions and Contests	47 C.F.R. § 73.1216 If a broadcaster airs information about a contest that it conducts, it must fully and accurately disclose the material terms of the contest. Moreover, the contest must be conducted as advertised.	No similar requirement applies.	No similar requirement applies.	No similar requirement applies.	No similar requirement applies.
Telephone Conversations	47 C.F.R. § 73.1206 If a broadcaster records a telephone conversation for broadcast, it must inform the calling party that it is the broadcaster's intention to air the conversation, unless the party is aware or may be presumed to be aware that its call is likely to be broadcast (e.g., a call-in program).	No similar requirement applies.	No similar requirement applies.	No similar requirement applies.	No similar requirement applies.
False Information and Taped Material	47 C.F.R. § 73.1217 Broadcasters may not broadcast false information concerning a crime or catastrophe if the licensee knows that the information is false or if the broadcast of such information will cause substantial public harm.	No similar requirement applies.	No similar requirement applies.	No similar requirement applies.	No similar requirement applies.
Emergency Alert System ("EAS")	47 C.F.R. § 73.1208 Broadcasters may not air previously recorded material without identifying it as such.	47 U.S.C. §§ 544(g), 606.	No similar requirements	No similar	No similar

⁴ See *Casino Advertising Enforcement Pending Disposition of Players International Case*, Public Notice, 14 FCC Rcd. 6203 (1999). The FCC has indicated that it would reevaluate this matter, but, to date, it has not. See *Id.*; see also *Greater New Orleans Broad. Ass'n v. United States*, 527 U.S. 173, 195-96 (1999). The holding in that case triggered the Commission's reinterpretation in 1999.

Regulations/Restrictions	Broadcast	Cable	DBS	Internet	Mobile Video
Public Service Announcements	<p>47 C.F.R. §§ 11.41, 11.44 All broadcasters must transmit Presidential-level EAS messages. State and local-level messages are typically carried by broadcasters, but are not required by regulations or law.</p> <p>Broadcasters must reserve their facilities for distribution of Presidential Messages during a national emergency.</p> <p>47 C.F.R. § 79.2 All video programming distributors (including broadcasters, cable operators, and DBS providers) are obligated to provide emergency information to people with hearing or seeing disabilities in a manner that does not interfere with the emergency broadcast itself.</p>	<p>47 C.F.R. §§ 11.41, 11.44, 79.2 Identical to broadcaster requirements.</p>	<p>apply currently, except that requirements that closed captioning for emergency information be provided and do apply. On May 31, 2007, DBS will be subject to the same rules as cable operators and broadcasters.</p>	<p>requirement applies.</p>	<p>requirement applies.</p>
Program Carriage	<p>No similar requirement applies.</p>	<p>47 U.S.C. § 536 47 C.F.R. § 76.1301 Cable operators and other multichannel video programming distributors (MVPDs) may not require a financial interest in a programming service as a condition of carriage for that service. MVPDs may not coerce a programmer to provide, or retaliate against such provider for failing to provide, exclusive rights to programming. MVPDs may not discriminate against programmers on the basis of affiliation or nonaffiliation.</p> <p>As a condition of the FCC's approval of the Adelphia transactions, regional sports networks (RSNs) unaffiliated with</p>	<p>47 U.S.C. § 536 47 C.F.R. § 76.1301 Requirements are identical to those for cable.</p>	<p>No similar requirement applies.</p>	<p>No similar requirement applies.</p>

Regulations/Restrictions	Broadcast	Cable	DBS	Internet	Mobile Video
Program Access	No similar requirement applies.	Comcast or Time Warner may seek to have carriage disputes resolved through arbitration. The FCC also indicated that it will initiate a proceeding to review carriage issues. 47 U.S.C. § 548 47 C.F.R. § 76.1002 Satellite-delivered programming owned by cable operators or their affiliates must be made available to other MVPDs on non-discriminatory prices, terms, and conditions. Cable operators are prohibited from entering into exclusive contracts with affiliated programmers, unduly or improperly influencing an affiliated programmer's decision to sell to an unaffiliated MVPD, or unduly or improperly influencing the prices, terms, and conditions of such sale. As a condition of the FCC's approval of the Adelphia transactions, Comcast and Time Warner affiliated RSNs, regardless of whether they are terrestrially-delivered, are subject to the program access rules, and distributors seeking access to such RSNs may elect to have access disputes resolved through arbitration. The FCC also indicated that it would initiate a proceeding to examine program access issues.	There are no similar requirements in the statute or regulations. However, as a condition of the FCC's approval of the News Corp.-DIRECTV merger, programming networks affiliated with News Corp. and DIRECTV are subject to restrictions similar to the program access rules, and distributors seeking access to such program networks may elect to have access disputes resolved through arbitration.	No similar requirement applies.	No similar requirement applies.
Must-Carry/Retransmission Consent	47 U.S.C. § 325(b) Broadcasters generally have the right to demand must-carry or negotiate retransmission of their signals by cable operators or DBS providers.	47 U.S.C. §§ 325(b), 534 47 C.F.R. § 76.56 Cable operators must carry all qualified local noncommercial educational broadcast stations and local commercial broadcast	47 U.S.C. § 338. 47 C.F.R. § 76.66(b) A DBS provider that has chosen to provide local into-local service must carry the signals of all broadcast	No similar requirement applies.	No similar requirement applies.

Regulations/Restrictions	Broadcast	Cable	DBS	Internet	Mobile Video
		<p>stations up to one-third of the aggregate number of usable activated channels on a system. In certain circumstances, they must also carry low-power broadcast stations.</p> <p>47 C.F.R. § 76.60</p> <p>Cable operators are prohibited from accepting or requesting compensation in exchange for carriage or channel positioning of broadcast signals carried pursuant to the must-carry rules.</p> <p>47 C.F.R. § 76.64</p> <p>Commercial broadcast stations may demand that cable operators negotiate for consent to carry the stations' signals.</p>	<p>television stations in the local market upon request.</p> <p>47 C.F.R. § 76.66(i)</p> <p>DBS providers are prohibited from accepting or requesting compensation in exchange for carriage or channel positioning of broadcast signals carried pursuant to the must-carry rules.</p> <p>47 C.F.R. §§ 76.64, 76.66(c)</p> <p>Commercial broadcast stations may demand that DBS providers negotiate for consent to carry the stations' signals.</p> <p>47 U.S.C. § 339</p> <p>DBS providers may provide distant network signals to subscribers outside a broadcast service area.</p>		
Channel Positioning	No similar requirement applies.	<p>47 C.F.R. § 76.57</p> <p>At the election of broadcast stations carried pursuant to the must-carry rules, cable operators must place broadcast station signals on the cable system channel numbers that correspond to the stations' over-the-air channel numbers.</p>	<p>47 C.F.R. § 76.66(i)</p> <p>DBS providers must retransmit the signal of the local television broadcast stations to subscribers in the station's local market on contiguous channels.</p>	No similar requirement applies.	No similar requirement applies.
Mandatory Basic Tier	No similar requirement applies.	<p>47 U.S.C. § 543(b)(7)</p> <p>47 C.F.R. § 76.920</p> <p>Cable customers must buy a cable operator's basic tier in order to be able to purchase any other video programming from the operator. Basic tier service must include all local broadcast station signals and any public, educational, and government channels.</p>	No similar requirement applies.	No similar requirement applies.	No similar requirement applies.

Regulations/Restrictions	Broadcast	Cable	DBS	Internet	Mobile Video
Tier Buy-Through	No similar requirement applies.	47 U.S.C. § 543(b)(8) 47 C.F.R. § 76.921 Cable operators may not require subscribers to buy intermediate tiers of service in order to obtain premium channels, and may not discriminate between subscribers who only purchase the basic tier and subscribers who purchase higher tiers with regard to the rates charged for premium channels.	No similar requirement applies.	No similar requirement applies.	No similar requirement applies.
Leased Access	No similar requirement applies.	47 U.S.C. § 532 47 C.F.R. §§ 76.970, 76.971 Cable operators must set aside channel capacity for commercial use by unaffiliated persons and must provide access to those channels at rates and on terms and conditions established by the FCC. As a condition of the FCC's approval of the Adelphia transactions, leased access programmers may seek to have carriage disputes with Comcast or Time Warner resolved through arbitration. The FCC also indicated that it will initiate a proceeding to review leased access issues.	No similar requirement applies.	No similar requirement applies.	No similar requirement applies.
Channel Occupancy	No similar requirement applies.	47 C.F.R. § 76.504 At least 60 percent of the first 75 channels of a cable system must be set aside for use by programmers unaffiliated with the cable operator. In 2001, the channel occupancy rule was overturned by the U.S. Court of Appeals for the D.C. Circuit. ⁵ The FCC has continued to operate as though the rule was	No similar requirement applies.	No similar requirement applies.	No similar requirement applies.

⁵ See *Time Warner Entertainment Co. v. FCC*, 240 F.3d 1126 (D.C. Cir. 2001).

Regulations/Restrictions	Broadcast	Cable	DBS	Internet	Mobile Video
Network Non-Duplication, Syndicated Exclusivity, and Sports Blackout	No similar requirement applies.	in place, as shown most recently by requiring Comcast and Time Warner to certify their compliance with the rule as part of the Adelphia transactions. 47 C.F.R. §§ 76.92, 76.111 Upon notification by a broadcaster or a holder of the broadcast rights to sporting events, cable operators are prohibited from carrying programs that duplicate the programming of a broadcast network, syndicated programming whose exclusive rights are held by a broadcast station, and live broadcasts of sporting events against the wishes of the holder of the broadcast rights.	47 U.S.C. § 339(b) 47 C.F.R. §§ 76.122-30 Requirements are identical to those for cable. However, DBS providers may substitute programming from any other television broadcast station for which the provider has obtained the necessary rights and permissions.	No similar requirement applies.	No similar requirement applies.
Entry, Economic, and Customer Service Regulation					
Franchise Authority Regulations	No similar requirement applies.	47 U.S.C. § 521 47 C.F.R. § 76.502 Local Franchise Authorities (LFAs) are permitted to condition the grant of a cable franchise on cable operators agreeing to a variety of regulations and conditions. In addition, LFAs have the right to approve transfers of ownership of a cable franchise and can take up to four months to grant such approval. LFAs often impose conditions on their approval and can require cable operators to undergo stringent due diligence prior to approval.	No similar requirement applies.	No similar requirement applies.	No similar requirement applies.
Rate Regulation	No similar requirement applies.	47 U.S.C. § 623 47 C.F.R. §§ 76.901-76.990 Cable operators are restricted with regard to the rates they can charge for their basic tier and associated equipment.	No similar requirement applies.	No similar requirement applies.	No similar requirement applies.
Customer Service and Consumer Protection	No similar requirements.	47 U.S.C. § 552 47 C.F.R. § 76.309 Cable operators must abide by	No similar requirement applies.	No similar requirement applies.	No similar requirement applies.

Regulations/Restrictions	Broadcast	Cable	DBS	Internet	Mobile Video
		specific FCC regulations governing – among other things – the hours their offices must be open, hours of customer service availability by phone, and bill formats. In addition, LFAs are permitted to establish and enforce even more burdensome customer service regulations on cable operators.			
Notice for Programming Changes	No similar requirement applies.	47 U.S.C. § 544(h)(1) 47 C.F.R. §§ 76.1601, 76.1603 Cable operators must provide subscribers and broadcasters 30 days written notice of a cable system's plans to delete or reposition a broadcast channel. Cable operators must also give subscribers 30 days written notice of any plans to change programming services.	No similar requirement applies.	No similar requirement applies.	No similar requirement applies.
Ownership					
SMATV Ownership	No similar requirement applies.	47 U.S.C. § 533 47 C.F.R. § 76.501 Cable operators are prohibited from offering SMATV service in any area served by their cable systems.	No similar requirement applies.	No similar requirement applies.	No similar requirement applies.
Radio Licenses	No similar requirement applies.	47 C.F.R. § 21.912 Cable operators are prohibited from owning a variety of radio licenses (including multichannel multipoint distribution service (MMDS), local multipoint distribution service (LMDS), and others) if a portion of the licenses' protected service area is within a portion of a franchise area actually served by the cable operator's system.	No similar requirement applies.	No similar requirement applies.	No similar requirement applies.
Subscriber Limits	Consolidated Appropriations Act, 2004, Pub. L. No. 108-199, § 629, 118 Stat. 3, 99 Broadcaster are prohibited from owning stations that can reach more than 39 percent of	47 C.F.R. § 76.503 Cable operators are prohibited from owning an attributable interest in cable systems that serve more than 30 percent of the national total of MVPD	No similar requirement applies.	No similar requirement applies.	No similar requirement applies.

Regulations/Restrictions	Broadcast	Cable	DBS	Internet	Mobile Video
	U.S. TV households.	subscribers. The order adopting this prohibition was reversed by the D.C. Circuit and a new limit (or new rationale for the 30 percent limit) has yet to be adopted.			
Attribution Rules	47 C.F.R. § 73.3555 Notes 1-2 For purposes of ownership rules, the FCC has deemed numerous partial ownership interests as "attributable." For example, a time brokerage agreement, in which a broadcaster controls more than 20 percent of broadcast time is attributable.	47 C.F.R. § 76.501 Notes 1-6 For purposes of ownership rules, the FCC has deemed various partial ownership interests as "attributable." For example, owning 5 percent or more of voting stock is generally deemed to be equivalent to owning 100 percent. The FCC recently announced that it will initiate a rulemaking proceeding to review its attribution rules. Based on press reports, the FCC will consider expanding the scope of its rules to encompass new forms of attributable interests (e.g., options).	No similar requirement applies.	No similar requirement applies.	No similar requirement applies.
Buy-Out Prohibition	47 C.F.R. § 73.3555(c) The four major networks (ABC, CBS, Fox, and NBC) are prohibited from merging. In addition, broadcasters are prohibited from owning interests in a radio station, another television station, or a newspaper except in certain circumstances.	47 C.F.R. § 76.505 A cable operator is prohibited from acquiring more than a 10 percent ownership interest in a local exchange carrier that provides telephone service in the area served by the cable operator, and vice versa.	No similar requirement applies.	No similar requirement applies.	No similar requirement applies.

Consumer Equipment Requirements	
Subscriber (Navigation) Equipment	
No similar requirement applies.	
<p>47 U.S.C. §§ 544a, 549 47 C.F.R. §§ 76.1200-1210</p> <p>Cable operators may not restrict subscribers' abilities to connect navigation devices to the cable system except where the devices might harm the network or are designed to steal services.</p> <p>Cable operators must cooperate in enabling set-top boxes and other "navigation" devices to be available at retail. After July 1, 2007, cable operators may not place into service new navigation devices that perform both security and nonsecurity functions.</p>	
	<p>Although the FCC is charged with adopting regulations to assure that navigation devices for all MVPD services are commercially available, it has exempted DBS providers and others from requirements it has established for cable operators.</p>
	No similar requirement applies.
	No similar requirement applies.

**Twenty-First Annual Aspen Institute Conference
on Communications Policy**

***The Future of Video:
New Approaches to Communications Regulation***

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August 16-19, 2006

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Selected Publications from the Communications and Society Program

Clearing the Air: Convergence and the Safety Enterprise

Philip J. Weiser

The report describes the communications problems facing the safety enterprise community and their potential solutions. The report offers several steps toward a solution, focusing on integrating communications across the safety sector on an Internet-Protocol-based backbone network, which could include existing radio systems and thus make systems more dependable during emergencies and reduce costs by taking advantage of economies of scale. The conference participants stressed that the greatest barriers to these advances were not due to lagging technology but to cultural reluctance in adopting recent advances. Writes Weiser, “the public safety community should migrate away from its traditional reliance on specialized equipment and embrace an integrated broadband infrastructure that will leverage technological innovations routinely being used in commercial sectors and the military.” 2006, 55 pages, ISBN Paper: 0-89843-458-0 \$15.00

Issues in Telecommunications Reform

Robert M. Entman

In these two reports, the author considers the changes that are necessary and appropriate to the Communications Act in view of technological convergence in the digital and network sectors, the changing economic and business circumstances of telecommunications users and providers, and the preservation of ongoing social policy. The reports also touch on how spectrum policies can address problems in rural telecommunications and broadcast services, and offer policy options for consideration in both the legislative and regulatory arenas. 2005, 67 pages, ISBN Paper: 0-89843-445-9, \$12.00

Reforming Telecommunications Regulation

Robert M. Entman

The report of the 19th Annual Aspen Institute Conference on Telecommunications Policy describes how the telecommunications regulatory regime in the United States will need to change as a result of technological advances and competition among broadband digital subscriber line (DSL), cable modems, and other players such as wireless broadband providers. The report proposes major revisions of the Communications Act and FCC regulations and suggests an interim transitional scheme toward ultimate deregulation of basic telecommunications, revising the current method for universal service subsidies, and changing the way regulators look at rural communications. 2005, 47 pages, ISBN Paper: 0-89843-428-9, \$15.00

Challenging the Theology of Spectrum: Policy Reformation Ahead

Robert M. Entman

This report examines the theology of spectrum—that is, the assumptions and mythology surrounding its management and use. The report looks at how new technologies affecting spectrum, such as software-defined radio, can challenge the conventional wisdom about how spectrum should be managed. Such innovations allow for access to unused frequency space or time on frequencies that are otherwise licensed to an exclusive user. 2004, 43 pages, ISBN Paper: 0-89843-420-3, \$15.00

Spectrum and Network Policy for Next Generation Telecommunications

Robert M. Entman

The report of the 18th Annual Aspen Institute Conference on Telecommunications Policy offers policy alternatives in both spectrum and network policy to achieve new gains for the telecommunications field. The first essay suggests new management approaches to encourage more efficient uses of spectrum while preserving the commitment to reliability of service and public safety values. The second essay debates the competitive structure of the telecommunications industry and its implications for building next-generation networks (NGN) and identifies three areas to encourage optimal development of the NGN: operate the NGN on a price-deregulated basis and begin to address access regulation issues,

secure the intellectual property rights of content suppliers, and adjust the system of subsidized pricing to bring about competitively neutral pricing. 2004, 92 pages, ISBN Paper: 0-89843-394-0, \$12.00

Balancing Policy Options in a Turbulent Telecommunications Market

Robert M. Entman

This report assesses the future of communications regulatory paradigms in light of desirable changes in spectrum policy, telecommunications market environments, and regulatory goals. It suggests four models of regulation, including government allocation, private spectrum rights, unlicensed commons, and a hybrid system of dynamic spectrum access. It also addresses how changes in spectrum and other telecommunications policies, as well as new business realities, might affect current regulatory regimes for the telecommunications industries. The report includes an essay on spectrum management, "The Current Status of Spectrum Management," by Dale Hatfield. 2003, 79 pages, ISBN Paper: 0-89843-370-3, \$12.00

Telecommunications Competition in a Consolidating Marketplace

Robert M. Entman

In the telecommunications world, what would a fully competitive environment look like? What communications initiatives should policymakers develop—considering the ultimate welfare of the consumer—to implement change in the regulatory climate? This report explores ways to reshape the current regulatory environment into a new competitive space. It addresses competition not only within but across separate platforms of communications such as cable, wireline telephony, wireless, satellite, and broadcast. The report also includes an essay on an innovative approach to wireless regulation, "Opening the Walled Airwave," by Eli Noam. 2002, 64 pages, ISBN Paper: 0-89843-330-4, \$12.00

Transition to an IP Environment

Robert M. Entman

This report examines a "layered approach" to regulation. By viewing telecommunications in four separate layers—content, application, network, and data link—policy discussions can address concerns in one

layer without negatively affecting useful existing policy in other layers. Also presented are beliefs that the growth of broadband should prompt a new discussion about universal service reform. The report also includes “Thoughts on the Implications of Technological Change for Telecommunications Policy,” by Michael L. Katz. 2001, 78 pages, ISBN Paper: 0-89843-309-6, \$12.00

Six Degrees of Competition: Correlating Regulation with the Telecommunications Marketplace

Robert M. Entman

This report addresses basic conceptual questions about what the nature of regulation should be in a competitive, broadband future. It also examines how fundamental policy issues such as interconnection, mergers, spectrum allocation, jurisdiction, universal service, and consumer protection should be handled in the interim. The report also includes “Regulation: The Next 1000 Years,” by Michael L. Katz. 2000, 65 pages, ISBN Paper: 0-89843-279-0, \$12.00

Residential Access to Bandwidth: Exploring New Paradigms

Robert M. Entman

This report explores policy initiatives that would encourage widespread deployment of residential broadband services throughout the United States. It identifies the regulatory system as one of the chief obstacles to achieving ubiquitous broadband deployment and offers a new regulatory model to overcome these barriers. 1999, 35 pages, ISBN Paper: 0-89843-256-1, \$12.00

Competition, Innovation, and Investment in Telecommunications

Robert M. Entman

This report considers how public policy can foster investment, competition, and innovative services in local exchange telecommunications. The report also includes “An Essay on Competition, Innovation, and Investment in Telecommunications,” by Dale N. Hatfield and David E. Gardner. 1998, 52 pages, ISBN Paper: 0-89843-235-9, \$12.00

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The Program's Executive Director is Charles M. Firestone, who has served in that capacity since 1989, and has also served as Executive Vice

President of the Aspen Institute for three years. He is a communications attorney and law professor, formerly director of the UCLA Communications Law Program, first president of the Los Angeles Board of Telecommunications Commissioners, and an appellate attorney for the U.S. Federal Communications Commission.