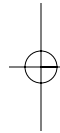
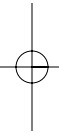




# Policy Issues for Telecommunications Reform

Reports of the 2005 Aspen Institute Conferences on  
Telecommunications and Spectrum Policy

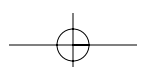
Robert M. Entman  
*Rapporteur*



THE ASPEN INSTITUTE

*Communications and Society Program*

Charles M. Firestone  
Executive Director  
Washington, DC  
2006



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The Aspen Institute  
Communications and Society Program  
One Dupont Circle, NW  
Suite 700  
Washington, DC 20036  
Phone: (202) 736-5818  
Fax: (202) 467-0790

Charles M. Firestone  
*Executive Director*

Patricia K. Kelly  
*Assistant Director*

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**The Aspen Institute**  
One Dupont Circle, NW  
Suite 700  
Washington, DC 20036

Published in the United States of America in 2006  
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Printed in the United States of America

ISBN: 0-89843-445-9

06-004

1521CSP/06-BK

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*The reader should note that these reports are written from the perspective of an informed observer at the conference. Unless cited to a particular person, none of the comments or ideas contained in this report should be taken as embodying the views or carrying the endorsement of any specific participant at the conference.*

## Foreword

This volume contains reports from two Aspen Institute conferences. One is on “Telecommunications Convergence,” a general topic for the 20th Annual Telecommunications Policy Conference convened by the Aspen Institute Communications and Society Program. Each summer, it brings together leading experts and players from government, industry, consumer protection, and academic sectors, and, at the least, advances the conventional wisdom on telecommunications reform. Its work on taking a layered approach over the “silo” approach to communications law in 2000, for example, helped catapult that theoretical approach into mainstream analysis. At best, this conference makes innovative suggestions for legislative or regulatory reform, as its work in 1995 helped pave the way for the E-rate in the Telecommunications Act of 1996.

In the summer of 2005, this conference began by tackling the basic underlying issues of rewriting the Telecommunications Act again. The conference report, deftly written by our erstwhile rapporteur Robert Entman, explores those issues—universal broadband, jurisdictional issues, consumer protection—and even touches on the thorny intellectual property issues inherent in all of the changes taking place in telecommunications these days.

The conferees moved from a starting point of rewriting the Act, to one of questioning whether a broad rewrite was necessary at this point, given the movement towards three or more platforms reaching the home and other hopeful signs of convergence and competition. That does not mean that reforms are not warranted, but rather such reforms might come sooner by encouraging the newer platforms challenging traditional wireline telephony and cable, e.g., wireless broadband and satellite. In the meantime conferees were able to pinpoint reforms in consumer protection, jurisdictional issues, and universal service.

The report describes participants’ thinking in each of these areas. The discussion on platforms is particularly useful, I believe, as it observes our current state of general competition between two platforms, cable and telephony, suggests that 2.5 platforms are already the

reality, with a number of partial competitors comprising that .5 of a platform, and even contains the suggestion that in some countries 1.5 platforms have proven satisfactory. The development of competitive platforms for delivery of broadband services at reasonable prices is clearly key to the future of American telecommunications policy, and the observations in this report help elucidate the trends of import in that area.

Of particular note, participants developed the bare bones of a proposal for a significant reform in the system for assuring universal service, naming it “Broadband for All.” And they made realistic suggestions for improving consumer protection in this complex area, “Truth in Broadband.”

The second report, which actually appears first in this volume because the conference occurred first, is the product of the third annual Aspen Institute Roundtable on Spectrum Policy (AIRS), which met at the Aspen Wye River House in the spring of 2005. We print the two reports together because AIRS is in fact a spin-off of the annual Telecommunications Conference, but more importantly, because they both began with a premise of how should the Communications Act be rewritten and both came away with the conclusion that modest reforms are more warranted than a full blown legislative rewrite.

The Spectrum conference was following up on a seminal conference the year before, which culminated in our publication “Challenging the Theology of Spectrum,” a report that dispelled many older myths and assumptions about spectrum and its governance. As a follow-on, the 2005 conference looked at specific issues that were concerning Congress and the FCC, the transition of broadcasting to digital transmission, and particularly, the application of spectrum policies for rural telecommunications uses. For, wireless has the potential to solve many concerns about delivery of broadband to the farm, while it creates other concerns for legacy wireline systems.

The conference produced a number of innovative policy reform proposals to bring broadband service to every American at affordable costs — all set forth in the conference report. Among these were a variety of proposals to allow use of white spaces in the broadcast spectrum in rural areas where there would be no actual interference with regular reception of those channels many miles away, the experimental relax-

ation of regulation in rural “Telecommunications Enterprise Zones” to facilitate quick application of new technologies to rural areas, and a variety of ways of phasing out uneconomic subsidies including the use of “reverse auctions” or temporary use of the subsidies to encourage and facilitate incumbent rural carriers’ adoption of newer, competitive technologies such as broadband wireless.

### **Acknowledgments**

For the past twenty years, these conferences have had a single, stellar rapporteur, Professor Robert Entman, who has taught at Duke, Northwestern and North Carolina State Universities during that time, and visited at other universities such as Harvard as well. This volume marks the end of the Entman era for our Communications and Society Program’s Telecommunications Policy Conference, as Dr. Entman has moved to a new named chair, the J.B. and M.C. Shapiro Professor of Media and Public Affairs at George Washington University. This new position brings with it new duties and opportunities, for which we congratulate him, despite our deep regret that he will no longer have the time to write our reports. He has shaped the conference series not only with clear and incisive writing, but by creating a trust among participants that what they brought to the table would be fairly and accurately reported. We wish Dr. Entman the best in his new role, and look forward to his continued participation in the Communications and Society Program in other capacities.

This conference is made possible by the generous contribution of its sponsors. We gratefully acknowledge and thank the following competing companies for their support of the Twentieth Annual Aspen Institute Conference on Telecommunications Policy: AT&T, BellSouth, Cablevision Systems, Cisco, Comcast, Cox Enterprises, Credit Suisse First Boston, Intel, QUALCOMM, Legg Mason, Motorola, National Association of Broadcasters, Regulatory Source Associates, SBC Communications, TDS Telecom, Time Warner, Verizon, Vonage, and The Walt Disney Company, and these companies for their additional support for the AIRS Conference: Cisco, Cingular Wireless, Credit Suisse First Boston, Intel, Motorola, National Association of Broadcasters, and the Walt Disney Company.

We are particularly thankful to our conference participants (listed in the Appendix to this volume) for their openness, constructive attitude, and willingness to grapple frankly and honestly with the issues inherent in the discussions.

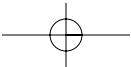
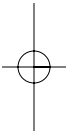
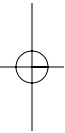
Finally, I want to extend a special thanks to our staff, Mridulika Menon, project manager, and Tricia Kelly, assistant director, for working behind-the-scenes to bring this conference and report to fruition, and Angelica Compton, our student intern, for aiding in those processes.

Charles M. Firestone  
Executive Director  
Communications and Society Program  
The Aspen Institute  
January 2006



**POLICY ISSUES FOR  
TELECOMMUNICATIONS  
REFORM**

*Robert M. Entman*



# Assuring Equity in Telecommunications for Rural America

## Introduction

This year's Aspen Institute Roundtable on Spectrum Policy (AIRS) focused on the needs of citizens at the margins in two senses: geographical and technological. To protect Americans on the geographical margins—that is, those in rural areas, who currently rely on local telephone service propped up by massive and distorting government subsidies—policy changes are required. The 10-15 percent of Americans who still rely entirely on over-the-air television also need adjustments in public policy as the United States approaches the switchover to digital television (DTV). The conference concentrated on exploring policy reforms to help these two constituencies while reconciling the conflicting interests of the telecommunications providers that serve them now or might in the future.

Some participants argued that the basic goal of spectrum policy can be summarized simply as maximizing consumer and social welfare. They said more specific lists of goals are all subsumed under the banner of consumer and social welfare. In practice, however, these two concepts are not always easily measured comprehensively. What one analyst might regard as maximizing consumer welfare, another looking at the same situation might find important omitted costs or benefits. For instance, UCLA Law School professor Jerry Kang<sup>1</sup> argues that although the current federal policy goal of increasing the numbers of local television stations seems to be congruent with consumer welfare, it fails to take account of serious negative externalities. Kang relies on social scientific studies of local television news that indicate that the medium increases racial animosity and misunderstanding, promotes fear, and alters voters' perceptions and decisions without their conscious awareness. These impacts are difficult or impossible to quantify. On the other hand, Kang neglects potential positive but also nonquantifiable externalities from local television. In other words, assessing consumer welfare comprehensively is no easy task.

Therefore, rather than focusing on abstractions such as consumer or social welfare, this report concentrates on policy options for reaching

specific goals. In brief, these objectives can be summarized as optimizing use of the spectrum while responding to the perceived needs and demands of politically influential broadcasters, rural telephone companies, and their customers. These stakeholders' needs and demands include competitively priced access to new telecommunications services as well as low-price voice telephony. Little if any dissent was voiced when participants suggested general, "motherhood and apple pie" goals such as efficiency, flexibility, reliability, innovation, ubiquitous access to broadband, consumer access to multiple competing platforms (where economically feasible), optimizing emergency and law enforcement capabilities, and maintaining network neutrality. More particularly and controversially, Roundtable participants analyzed and debated options for the following specific goals:

1. Protecting rural landline telephone customers from rate shock while assuring rural Americans access to broadband and minimizing any gap between telecommunications technology available in urban and rural areas.
2. Assuring rural telephone firms opportunities to survive and prosper in a competitive telecommunications environment by providing a path to modernize the firms' technology. Upgrading would reduce if not eliminate the need for expensive, market-distorting subsidies to rural America.
3. Freeing up valuable broadcast spectrum for wireless broadband and other service in rural areas, without disrupting access to telecasts currently received over the air (OTA) by roughly 10-15 percent of Americans who still do not subscribe to a paid multichannel video service.

These objectives are intertwined. Pragmatic attention to the political clout of rural America will allow rationalizing of an obsolete rate structure that undermines economic efficiency and keeps independent rural landline telephone companies (telcos) dependent on economically distorting subsidies—a dependence that actually could increase the long-term threat to the telcos' survival by insulating them from inexorable market and technological forces. As Charles Firestone, director of the Aspen Institute Communications and Society Program,

observed, the rural paradox is that wireless technology, which poses the greatest peril to independent rural wireline telcos, may also become their salvation. Ensuring that rural telcos and residents can avail themselves of modern telecommunications technology promotes economic development, and bolstering local economies in turn supports broadcast advertising—and growing customer bases for telcos.

Five innovative policy ideas emerged at the Roundtable, although not all participants were in agreement with the suggestions:

1. Use the universal service funds that currently are subsidizing rural phone rates—\$6.5 billion per year from the federal jurisdiction alone—to pay rural wireline telcos to switch to wireless or other advanced technologies. Over a decade, this transition would provide \$65 billion to rural telcos, giving them a fair shot at competing with new entrants while permitting phase-out of the existing rate system, with all its distortions.
2. Begin pilot testing of projects that use unoccupied, “white space” spectrum in rural areas, within frequencies currently allocated to television broadcasting but completely outside any existing broadcast contour.
3. Establish telecommunications enterprise zones (TEZs) to promote a range of pilot projects and experiments. These activities will help determine policies that optimize spectrum use and balance competing values and interests. For instance, different policies could be implemented experimentally in TEZs to determine which options best balance the goals of using spectrum white space while minimizing interference with other uses.
4. Hold reverse auctions in which firms bid for the opportunity to serve as broadband providers in rural communities. Such auctions could be tried as TEZ experiments or separately.

**Wireless technology, which poses the greatest peril to independent rural wireline telcos, may also become their salvation.**

5. To minimize problems with the planned switchover to DTV technology, make available up to two subsidized, low-cost digital converter boxes for every household that currently relies in whole or part on OTA signals.

Other policy proposals received attention at the Roundtable, although they did not generate consensus; some mirrored ideas explored more thoroughly at previous meetings. These proposals elicited varying but substantial support at least in principle, if not on specific implementation details. The following ideas were discussed:

- Vesting private property rights in currently licensed spectrum for some licensees, such as television broadcasters, and allowing these licensees flexibility in using that spectrum.
- Expanding availability of spectrum for unlicensed uses, which some analysts regard as especially promising in rural areas.
- Speeding implementation of software-defined radio and cognitive radio technology, which allow far more intensive use of a given frequency band (see reports of previous AIRS conferences for further discussion).
- Encouraging local governments or citizen cooperatives to operate wireless Internet service provider (WISP) systems, making broadband more widely available—particularly in areas underserved by for-profit firms.
- Easing state and local regulation of antenna tower placement to facilitate rollout of wireless services.
- Attaching a license fee to the cost of purchasing certified equipment (such as Wi-Fi routers and wireless telephones) used in unlicensed spectrum. This approach could essentially supplant the need to hold auctions for the right to operate in a frequency band, while still providing revenue to the Treasury.

None of these concepts, however, yielded more specific policy recommendations.

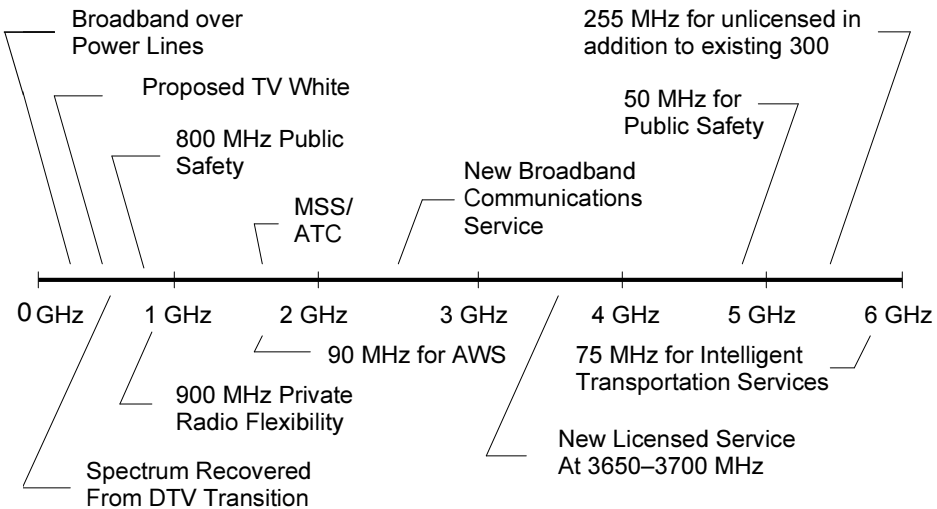
## How Scarce Is Spectrum?

Before discussing policy ideas that did generate innovative proposals, an explanation of why the Roundtable participants paid little attention to spectrum currently assigned to government entities is important. Federal policy recently has made available more of the spectrum assigned U.S. agencies for flexible and shared use. Therefore, one could argue that there is little need to worry about pushing the federal government to share more of its frequency allocations with private users. Several Roundtable participants said that recent policies are opening up sufficient new spectrum at least for the short run, and certainly for most rural areas. Julius Knapp, deputy chief of engineering and technology at the Federal Communications Commission (FCC), described a dozen new projects throughout the spectrum, including frequencies below 100 MHz (for broadband over powerline or BPL). Figure 1 illustrates these activities. Michael Gallagher, assistant secretary of commerce and head of the National Telecommunications and Information Administration (NTIA), pointed to several initiatives, including one that has provided for sharing portions of the federal government's spec-

FIGURE 1

### The BIG Picture: Spectrum in Transition

Source: Julius Knapp, FCC



trum around 5 GHz with new users. Besides leading the technical work on these issues, the NTIA is administering another project at 70/80/90 GHz and has streamlined licensing to the point that potential users of these frequencies need only fill out a form on the FCC's website to apply for a license.

From the private sector, Dewayne Hendricks, chief executive officer (CEO) of the Dandin Group, an Internet service provider (ISP), said that given the FCC's estimate of 6,000 WISPs in the United States, there are thousands of projects already underway to deliver wireless Internet service and argued that there is simply no rural spectrum shortage.<sup>2</sup> Brian Fontes, vice president of federal relations for Cingular Wireless, suggested that there may even be a surplus of spectrum in some rural regions, where frequencies lie fallow for lack of interest on the part of providers.

On the other hand, FCC Commissioner Jonathan Adelstein observed that data on rural areas are incomplete, and we may be prone to overestimating availability of broadband service and spectrum to deliver it wirelessly. Furthermore, Adelstein said, the rural projects would merely let rural users catch up with what has long been available in urban areas. He emphasized the need for rural Americans to have "comparable bandwidth at comparable prices."

In light of this remark, even if federal agencies are making significant progress in opening up spectrum to new users, a strong case remains for proactive policy that reduces remaining obstacles and inefficiencies. What seems like sufficient spectrum today may become a shortage when new applications already in the pipeline (e.g., mobile high definition television (HDTV)) emerge on the market demanding speeds of 100 gigabits per second or more. Thomas Hazlett, professor of economics at George Mason University, said that even now at least one cell phone carrier does not have sufficient spectrum to offer a third-generation (3G) Evolution Data Only (EvDO) broadband service. Making more spectrum available to cellular carriers with liberal use provisions for licensees would benefit public safety organizations, which could then contract with more competitive, more advanced networks for services they must deliver. Despite some progress in freeing up spectrum, then, the prudent approach is to continue pushing for rationalization of public policy to keep up with rapidly evolving technological innovations and market demand. In any case, Roundtable participants spent little time analyzing



ways to give private users a bigger share of federal (or state and local) government spectrum; they focused instead on spectrum now assigned to television broadcasters or other private entities.

### *Subsidize Rural Telco Transition to Wireless Technology*

Driving all of the foregoing policy suggestions are developments in wireless technology that, in the words of Robert Pepper, former chief of policy development at the FCC and currently senior managing partner with Cisco Systems, “overcome the tyranny of long distance and low density.” Traditional wireline telephony demanded that firms bear high up-front costs, but wireless technology changes the market from a high fixed cost model to an incremental cost, consumer electronics model. In the latter regime, end users rather than the communications carriers purchase much of the electronics at Best Buy and similar outlets, or on the Internet. Pepper described Prairie Net, which has 100 locations in rural Iowa and Illinois, using off-the-shelf equipment to create a wireless broadband “cloud” in small communities. Within their coverage areas, these WISPs could offer not just high-speed data but mobile telephony, via voice over Internet Protocol (VoIP) technology. At the same time, cellular phone service has spread to many rural communities, allowing residents to bypass the local telco and avoid paying long distance rates, especially intrastate, that sometimes range as high as 40-50 cents a minute. On most cellphone plans, local and long distance calls cost the same, and in many cases their marginal cost (after the user pays the monthly fee) is zero. Cable television systems also are offering VoIP telephony in many locales, with rate plans that make no distinction between local and long distance calls.

These developments in wireless telephony and broadband render the existing rate structure unsustainable because it relies on interstate and intrastate carrier access charges from long distance calls. Increasing

**Wireless technology changes the market from a high fixed cost model to an incremental cost, consumer electronics model.**

*Robert Pepper*

numbers of consumers are switching from landline to cell service or VoIP, shrinking the revenue from long distance charges previously used to subsidize traditional telcos in high-cost areas. This erosion in the subsidy base threatens the long-term financial viability of the rural telcos that depend on them. Yet rural telcos and some of their customers, perhaps naturally, resist changes in a system that has long provided handsome returns for telco owners and low local rates for consumers.

Pepper proposed a way out of this impasse: Apply the money now going to the federal and state Universal Service Funds (USFs)—\$7-9 billion per year—along with funding available from the Rural Utilities Service (RUS) telecommunications program,<sup>3</sup> for perhaps 10 years to

**The choice is between another 10 years of paying rural telcos to continue relying on old, high-cost technology or using the same funds to help guarantee a higher-technology, lower-cost future for the telcos and their customers.**

enable high-cost rural carriers to install any lower-cost technology they want. Rural telcos could offer high-capacity broadband networks and telephone service at significantly lower cost. This outcome eventually would eliminate the need for any subsidy to carriers because they would have switched to low-cost (predominantly wireless) technology. At the end of a transition period, the carriers would offer reasonable telephony rates, reflecting (far lower) actual costs, while also generating revenues from the new services they could offer via broadband. Thus, the choice is between another 10 years of paying rural telcos to continue relying on old, high-cost technology—in essence subsidizing the telcos into guaranteed obsolescence—or using the same funds to help guarantee a higher-technology, lower-cost future for the telcos and

their customers. In this scenario, individual customers who could not afford the market rate for the telco's new telephony service could obtain (nondistorting) subsidies.

Of course, rural telcos might resist a policy mandating that they modernize themselves, even if they can decide exactly what combinations of technology to use and do it at government expense. The

response to this opposition would be to remind the telcos of the stark facts: The base of the USF subsidies—long distance carrier access charges—is eroding rapidly. Congress is unlikely to authorize new taxes to pay for them. Rural telcos that insist on doing business the old way therefore face a substantial threat to their long-term viability, and the offer to help them modernize should be one they cannot refuse.

As the subsidies shift from maintaining to rebuilding the old infrastructure, local telephone rates would have to rise, likely engendering public opposition. On the other hand, at the end of the transition—if not well before then—consumers should be receiving an array of new services and technologies for a price close to what they currently pay for both local and long distance calling. Moreover, as for the telcos, so with their customers: Ultimately there is no alternative to changing the subsidy structure, except perhaps to raise taxes. Although some legislatures might go along with this strategy, many representatives would balk at the prospect of taxing all of their constituents so that rural residents alone can maintain \$10-15 monthly phone service—especially when a majority of those same rural Americans can afford \$60 cable TV and \$40 cellphone service.

#### *Using Unoccupied Frequencies in Rural Areas*

A second proposal calls for pilot testing of projects that use unoccupied “white space” spectrum in rural areas.<sup>4</sup> These programs would cover frequencies currently allocated to television broadcasting but completely outside any existing broadcast contour. They also would provide underlays in channels at the fringe of broadcast contours for new uses.

The congressionally mandated transition to DTV, originally scheduled for completion in 2006 and likely delayed until at least 2009, remains in flux. Nonetheless, Roundtable participants voiced considerable support for exploiting unoccupied frequencies in prime areas of the spectrum—those with favorable propagation characteristics long set aside for analog television. Lying fallow, this “beachfront property” awaits policy change to meet what some observers believe is enormous pent-up demand for spectrum. Some attendees observed that in a substantial part of the country, portions of the spectrum allocated to television broadcasting constitute wholly vacant white space where, with

proper safeguards, operation of other services almost certainly will pose no interference to other broadcast stations because none reach them. Other rural communities may lie within the broadcast contours of just one, two, or perhaps three TV stations. Many Roundtable participants endorsed allowing other services, such as wireless broadband or mobile telephony, to use frequencies allocated to, say, television channel 4 where only the signals on channels 2 and 9 reach a town. Assuming technically sufficient guard bands are created to avoid interference with channels 3 or 5, there seems to be little danger in experimenting with alternate

**In a substantial part of the country, portions of the spectrum allocated to television broadcasting constitute wholly vacant white space.**

uses for channel 4. Michael Gallagher of the NTIA described one such use by the military. At remote Fort Irwin in Nevada, commanders use radio frequency identification (RFID) tags to monitor individual soldiers as they train in areas that simulate desert terrain. The tags operate in the television band, apparently without causing any interference.

As Michael Calabrese, vice president of the New America Foundation, pointed out, current policy restricts the entire broadcast band to television broadcasters even in the remotest areas, such as much of Alaska. These places obviously will never support 22 OTA channels, given that even New York City cannot do so. This factor is another point in favor of allowing flexible uses of nonoccupied channels in rural America. Many Roundtable participants supported operation of non-broadcast services as underlays even on occupied channels. Indeed, if new rural uses of spectrum in the television band were undertaken as a series of experiments, the results probably would help guide a smoother transition to flexible uses and underlay operations in denser urban markets.

Some Roundtable participants objected, however, not just to experimental rural operations in the analog broadcast channels but to the general ideas of reallocating frequencies from television broadcasting to other services and having those services share occupied channels as underlays, whether in urban or rural areas. Much of the debate revolved around the seriousness of potential interference. A second

controversy surrounds the transition to DTV, which (as envisioned by Congress) would have television stations vacating their original analog channels of 6 MHz each while remaining on their more recent channels allocated under the 1996 Telecommunications Act. This debate concerns ensuring continued access to free broadcast television for the 10-15 percent of the public that does not subscribe to cable, satellite, or other multichannel video services.

Some Roundtable participants argued that even urban areas experience inefficient uses of this prime spectrum. They pointed to the existence of three Public Broadcasting Service (PBS) TV stations reaching New York City—and a total of 22 TV broadcasters serving the nation's largest metro area. Robert Pepper of Cisco Systems asserted that some of the latter exist as OTA entities only because of must-carry rules that ensure their carriage on cable systems. He predicted that they would lose barely any audience members if they moved off the air to become cable/satellite only services, and the licensees might well find more profitable operation in using their licensed spectrum to offer services other than television. Current policy forbids this use, however.

Based on an analysis of the political environment—which Pepper predicts would see “an absolute war made in heaven” in response to proposals mandating that broadcasters share spectrum with licensed or unlicensed underlay services—Tom Hazlett offered one alternative option: Simply deed analog spectrum over to current licensees and allow them to do what they want with their private property. Citing the experience of Australia, he argued that this approach would ensure rapid technological innovation and marketplace entry while avoiding a political donnybrook. On the other hand, some Roundtable participants noted that the windfall to television broadcasters, who received their analog and digital channel assignments free of charge, would throw substantial political obstacles in this proposal's path. In truth, however, the windfall issue cuts both ways: The current, go-slow policy blocks innovation and protects existing broadcasters and other licensees from competition.

Kevin Kahn, senior fellow and director of the Communication Laboratory at Intel, suggested breaking the potential interference problem into two components: interference that might be caused by higher-power users such as broadcast stations or WISPs and interference that might be caused by low-power equipment in the hands of consumers

(cordless phones or home Wi-Fi networks). Both problems are relatively easy to solve, Kahn said. In the former case, the source of the interference should be obvious, and government could readily enforce a solution. In the latter case, if a consumer's 5.8 GHz cordless phone is interfering with his own reception of, say, ABC Television, the consumer can return the telephone to the merchant and try a new one—or perhaps decide to do without either cordless telephones or ABC programs. Said Kahn, "We don't need heavy-handed institutional solutions where the problem isn't really that bad. We'd be better off not using sledge hammers to kill gnats." Kahn emphasized that setting proper receiver standards and transmitter parameters for interference, with perhaps a 15 percent buffer zone on both ends of the band in question—would deal readily with most interference—and would do so with today's "off-the-shelf" technology, rather than requiring "exotic" new technology such as that embodied in cognitive radio.

The positions of other Roundtable participants stood in contrast to Kahn's sanguine engineering perspective on interference. Jane Mago, senior vice president and general counsel of the National Association of Broadcasters (NAB), described the many pressures her office faced when she was deputy chief of the Enforcement Bureau at the FCC. She emphasized the difficulty of finding and then fixing the sources of interference. "If consumers get a blank TV screen because of interference, they will be unhappy." Brian Fontes of Cingular added that when eliminating interference requires costly and time-consuming fixes, merely identifying the source and directing it to stop interfering may not work—especially if some interference complaints arise between firms competing for the same customers. Preston Padden, executive vice president of government relations for ABC/Disney, also raised the specter of interference, although he also conceded that if viewers could be assured reliable interference protection, broadcasters' doubts about rapidly transitioning to DTV would lose much of their force. Indeed, nobody at the Roundtable claimed that the interference problem is entirely unmanageable, although some emphasized that we should proceed deliberately rather than rapidly in making new uses of the broadcast spectrum.

Kahn's rejoinder to those in this "go slower" contingent was that at least in remote rural areas, available unoccupied frequency is capacious enough that if somebody applied for a high-powered TV license, even

today they could meet FCC standards for noninterference. In Kahn's view, this point shows that the go-slow approach is unduly timid. At least with regard to rural areas outside TV stations' contours, the FCC's rules already allow use of high-power transmission (but only for TV) in the very frequencies that "go slow" proponents fear turning over to lower-power uses.

### *Telecommunications Enterprise Zones*

One cure for this impasse is to move ahead boldly, but only in a few geographically limited areas. Brian Fontes of Cingular suggested a series of experimental policies in a limited number of localities—an idea Charles Firestone of the Aspen Institute dubbed "telecommunications enterprise zones" (TEZs). Fontes proposed that the federal government, in cooperation with states, designate some communities where telecommunications entities would face minimal regulation beyond obtaining authorization and ensuring against undue interference with other users. The carriers covered might be either wireless or wireline or both; some rural areas may have small towns or cities with enough density to support wireline but require wireless to reach outlying areas. Beyond light regulation, Fontes urged reform of tax policy to enhance incentives for innovation and deployment of new technology in the market. The FCC would be responsible for overseeing TEZs and determining how various technologies and regulatory and tax policies play out in the real world.

**Fontes proposed that the federal government, in cooperation with states, designate some communities where telecommunications entities would face minimal regulation beyond obtaining authorization and ensuring against undue interference with other users.**

Julius Knapp of the FCC and Kevin Kahn of Intel both suggested that the precedent of "licensing light" might be applicable in TEZs, where license applications could be submitted via a website. This arrangement

would enable nimble players to obtain licenses and go into business quickly. With respect to current incentives, Brian Fontes mentioned the experience of his own firm in trying to work with the Rural Utilities Service (RUS), which putatively offers subsidized loans for carriers that wish to establish operations in rural areas. The loans come with many strings attached, said Fontes, and Cingular decided to rethink this approach. Cingular did encourage its smaller rural roaming partners to see if they could benefit from the RUS program, but the larger point is that the current incentive and regulatory structure discouraged a major wireless carrier from going into rural areas itself.

The major argument against the TEZ concept was that pilot or experimental programs simply delay necessary policy change. They may yield useful information, but the results often are open to competing interpretations that depend on the observer's interests. More important, some Roundtable participants argued, there is little need for further experimentation. They asserted that policymakers already have a good enough idea, from experience with other policies and in other countries, about issues and problems likely to occur, and claimed that any problems can be addressed adequately when they arise.

#### *Reverse Auctions for Rural Phone Service*

Roundtable participants discussed at some length use of reverse auctions instead of subsidizing modernization of existing rural telcos to help ensure affordable phone service. Under this option, firms would bid for the right to offer service to residents of communities now served by one of approximately 1,400 high-cost rural carriers. A rural telecommunications service auction might take three forms:

1. Firms would bid to provide specific types and quality of service at a specific price, and the winner would be the carrier promising the lowest price.
2. The government would announce how large a subsidy would be available to carriers serving each area, and the winning firm would be the one promising the best package and quality of services at the stated level of subsidy.



3. The government would announce the amount of subsidy in each community, with the one promising to deliver the highest bit rate to the consumer selected as the winner.

All three options would require the government to set the (affordable) price that a winning firm could charge end users for the service. Incumbent telcos could bid, but so could others, and unregulated entrance by losing carriers or those that did not bid would be allowed as well. Incumbent telcos could remain in the market even if they did not win, but their subsidies would be phased out relatively quickly. To ensure that winning carriers would have incentives to keep investing and remain responsive to changing technologies and market conditions, new auctions might be held every 10 years, with the original winner facing the potential of being replaced.

As William Webb, head of corporate research and development for British Ofcom, observed, this idea merely extends long-established government procurement practices by which agencies request and select contractors' proposals to construct office buildings or roads. Dale Hatfield, an independent consultant and adjunct professor in the Interdisciplinary Telecommunications Program at the University of Colorado-Boulder, said that policies similar to the first option are followed in countries such as Chile and Ghana, where a universal service fund yields subsidies to rural firms that promise to provide the lowest price for a given level of service to an area.

FCC Commissioner Jonathan Adelstein and others offered some caveats. Adelstein said that any proposal to tinker with the USF system must be "sensitive" to existing beneficiaries of universal service and ensure that any subsidies involved actually go to carriers that offer truly universal service. He also noted that subsidizing competition in high-cost rural areas would make no sense. If the community already enjoys market entry and multiple providers, it should not qualify for the new reverse auction program. Responding to the need for sensitivity to

**Firms would bid for the right to offer service to residents of communities now served by one of approximately 1,400 high-cost rural carriers.**

existing beneficiaries, Michael Calabrese of the New America Foundation suggested a “hybrid” auction program whereby the 1,400 incumbent rural carriers would receive a window of perhaps three years to establish service that meets standards for price, quality, and subsidy level that would govern in the event of an auction. At the end of this period, if the incumbent has not done so, the auction would be held.

The NTIA’s Michael Gallagher and others further observed that the states would need to participate in the reverse auctions because about 25 states have explicit universal service programs, and the rest have de facto programs through implicit subsidies in rate structures. Charles Firestone of the Aspen Institute suggested that these auctions, like other proposals discussed in this report, could be undertaken as experiments in states or in TEZ communities under federal auspices.

#### *Speeding the Digital Transition by Distributing Inexpensive Digital Converter Boxes*

The 1996 Telecommunications Act allocated each existing TV licensee a new 6 MHz channel of spectrum for digital broadcast; under the legislation, each licensee was scheduled to relinquish its existing analog channel in 2006. At that time, all TV broadcasts were scheduled to use digital transmissions exclusively. This transition would free up a total of 108 MHz of spectrum—24 MHz slated for public safety functions and the rest for wireless broadband and two-way communication. The transition to DTV has not proceeded as smoothly or quickly as Congress envisioned, however. Congress believed this provision would accelerate the diffusion of HDTV sets—an OTA high-definition signal requires a 6 MHz channel—while also keeping U.S. firms at the forefront of video technology. It also recognized that some broadcast stations might choose to put their 6 MHz digital channel to other uses, including transmitting several lower-definition digital signals. This flexibility would increase competition and choice in video programming.

Congress failed to include a mandate for digital tuners in TV receivers, however, ensuring that millions of households relying exclusively on OTA broadcasts would find themselves cut off from television in 2006. That possibility surely would generate a political firestorm. Avoiding this calamity while making the transition happen as soon as practicable is the animating goal. According to some estimates, the

spectrum freed up when the transition occurs could increase consumer welfare by upward of \$250 billion. Each year of delay therefore imposes significant opportunity costs on consumers, perhaps especially in rural areas with so much unoccupied spectrum suitable for broadband services delivering VoIP, data, and/or multichannel video. To minimize political opposition and speed the planned switchover to DTV technology, then, Roundtable participants generally supported distributing subsidized, low-cost digital converter boxes to every household that currently relies in whole or part on OTA signals.

Digital converter boxes retail in Britain for about \$65. Economies of scale would reduce that cost if many millions of U.S. orders were assured. Robert Pepper of Cisco Systems suggested that even now installing a digital to analog conversion chip in low-end Chinese televisions costs a mere \$15-20. Assuming conservatively that total manufacturing and distribution costs in the U.S. would drop to \$50 a unit, the total cost might reach about \$4 billion (73 million OTA-reliant television sets times \$50).

To place this amount in context, the NAB's Jane Mago estimated that the TV broadcast industry has already invested billions of dollars to convert transmission to digital technology. Charles Firestone of the Aspen Institute suggested that given broadcasters' sizeable investment to date, the additional capital would be relatively easy for broadcasters themselves to spend on converter boxes to ensure that they maintain their OTA audience. Mago contested the proposal because of the significant investment broadcasters already have in the transition, without any return. That amount is low enough, however, to render moot some of the more complicated proposals to maintain availability of OTA television after the digital switch. Ideas such as conducting reverse auctions for the right to serve OTA customers or establishing agencies to oversee community OTA programs probably would require far more time and money than simply giving boxes away or selling them through retail outlets, as in Britain. Given that the political and ethical grounds for

**According to some estimates, the spectrum freed up when the transition [to DTV] occurs could increase consumer welfare by upward of \$250 billion.**

delaying or opposing the digital transition of television broadcasting rests largely on the need to ensure that signals remain available in OTA television households, \$4 billion seems to be an almost trivial amount when it is set against estimated benefits in the hundreds of billions.

Working with the \$4 billion cost estimate, the group converged on the idea of making digital converter boxes available to OTA-reliant households. Participants extensively discussed the following options:

1. Provide households digital boxes free of charge, using revenue generated by auctions of the analog spectrum.
2. Provide boxes through retail outlets for nominal co-payments of perhaps \$20.
3. Provide subsidized boxes at little or no cost for households deemed eligible by means testing.
4. Make boxes available for sale at full retail price.

In a straw vote of participants near the end of the Roundtable, option 2 was a clear winner, garnering support from more than 80 percent. Means testing, though perhaps attractive in the abstract, would be very expensive to administer and enforce, and giving away the boxes for free probably would encourage waste. Under option 2, consumers could purchase up to two boxes for \$20 each, with the rest of the cost subsidized. Full price would be charged for more than two TV sets per household, under the assumption that consumers who can afford more than two TV sets need no subsidy. Such a program also would have administrative costs, but co-payments might cover these expenses—yielding more than \$1 billion if every analog television were outfitted with boxes (73 million times \$20). Stores should happily stock the boxes because making them available would bring in plenty of customers.

Although Mago voiced approval for the general idea of subsidizing boxes from the government's spectrum auction proceeds, Preston Padden of ABC/Disney pointed out the partisan/ideological divide that probably would emerge in response to that course. In Padden's analysis, some Democrats would argue that everyone who wants boxes should get them at a low subsidized cost because auction proceeds and

efficiency gains can easily cover the cost. Some Republicans, Padden predicted, would agree with the Democrats, but others would oppose a subsidy program on general “small government” grounds. On the other hand, as Padden also pointed out, the possibility of fierce public backlash against a digital transition that entails blank television screens in millions of households should make just about every official take notice. It seems reasonable to think that a winning legislative coalition could be formed around the idea of subsidized boxes with co-pays. Nearly everyone, including President Bush, seems to support universal access to broadband, and making the prime spectrum occupied by analog television broadcasting available would dramatically facilitate achievement of that goal.

Some Roundtable participants argued that consumers should not bear any direct costs from the digital transition. Charles Firestone of the Aspen Institute suggested an alternative that would involve establishing a joint fund to support the converter box distribution program. Contributors might include broadcasters, manufacturers, and spectrum users, including carriers, as well as government agencies. Some participants argued that consumers inevitably would wind up paying for these increased costs experienced by suppliers in any case.

The key point, however, seems to be that the amount is such a small fraction of the federal budget or even the total amount of money spent on telecommunications in a given year that finding the political will to enact such a program should be possible. Another way of covering the \$4 billion price tag would involve adding a temporary \$1 charge on monthly bills for cable, satellite, and cell phone service. Within a year or two, such a charge probably would recoup that amount, at which time the charge could be lifted. Members of Congress are always skittish about adding taxes, but this option would be as unobtrusive, painless, and—given the major benefits of speeding the digital transition—easily justified as any they might consider.

### **Conclusion: Keeping Rural Areas from Falling Behind**

Roundtable participants also mentioned two general approaches to spectrum reform. Although neither of these approaches received much elaboration, both merit future discussion. The first notion—explicitly distinguishing between high-density (and lower-cost), generally urban markets and low-density (typically higher-cost), rural mar-

kets—remained at the margins of the discussion, although it could propel a major reexamination of spectrum policy. Driving this distinction would be differences in the amount of fallow spectrum, along with the goal of minimizing the gap in the level of technology widely available in urban as opposed to rural areas. Eli Noam, professor of finance and economics and professor of business and law at Columbia University, said the availability and speed of broadband service in rural America lags well behind availability and speed in the typical metropolitan community. This disparity may be chronic, Noam said, “unless technological development slows down so that the frontier doesn’t

**All appeared to agree that making some form of broadband service available to virtually every American at an affordable price is a worthy goal.**

advance as fast as it has in metropolitan areas.”<sup>5</sup> Noam also noted that high-cost rural areas will be more likely to have uncompetitive markets and needs for subsidies.

This scenario raises the question of which services “universal service” should cover in the future. Mary Brown, senior telecommunications policy counsel for worldwide government affairs at Cisco Systems, asked whether the goal should be to ensure that rural areas, like most cities, enjoy

at least one or more platforms that can deliver multichannel video, VoIP, and broadband data services, or whether the goal is limited to making broadband data service available. Although Roundtable participants never conclusively decided this matter, all appeared to agree that making some form of broadband service available to virtually every American at an affordable price is a worthy goal. As Michael Gallagher of the NTIA said, President Bush has endorsed this goal.<sup>6</sup> Assuming that deceleration of technological change does not occur any time soon, then—which means that some technology gap is likely to persist and could widen without policymakers’ explicit attention—several participants suggested that establishing a dual regulatory structure might be sensible, although such a structure would have to avoid inefficiencies that arise from distorting prices to subsidize all rural areas indiscriminately.

Kevin Kahn of Intel asserted that most rural areas have “a ton of empty radio spectrum,” and for this reason it would be “crazy” (or at least uneconomic) to run fiber in these places. Indeed, current regulations leave many rural WISPs occupying mediocre spectrum while “totally unused TV channels” that have far better propagation characteristics—spectrum that can more reliably deliver higher speeds at lower cost—remain idle merely because those 6 MHz segments are allocated to cities 100 or more miles away. In Kahn’s view, this situation suggests a need for less uniform spectrum regulation that clearly distinguishes between channel assignments in, say, rural Colorado and those in the Denver metropolitan area. In fact, by reducing costs in rural America, such changes in regulation might allow competitive (wireless) carriers to exist even there, which would help minimize the technology gap with urban areas and provide the other benefits of competition rather than forcing rural communities to put up with monopolies. Competition also would reduce the need for subsidies and regulation.

Of course, existing policy calls for TV broadcasters to give up the analog half of their licensed spectrum as part of the DTV transition, although the change has been delayed. In light of the current political stalemate, such a differentiated spectrum regime could constitute a compromise position that broadcasters could live with. They might have to relinquish large swaths of frequencies in areas they still do not serve more than 50 years after the band was allocated, but they might maintain more control over channels where they do serve. On the other hand, having proven to be extremely reluctant to countenance any alteration in spectrum allocation, broadcasters might fight this idea, perhaps fearing (with some reason) a slippery slope that ultimately would lead to total loss of some or all OTA channels.

The other general policy concept that received some attention would make more unlicensed spectrum available in rural areas even if (because of interference and other concerns) much urban area spectrum remains under a licensing regime. Charles Firestone of the Aspen Institute quoted Yale law professor Yochai Benckler’s endorsement of unlicensed spectrum commons in communities that currently lack licensees—a proposal that implicitly would lead to more unlicensed spectrum in rural areas than in urban areas.

Robert Pepper of Cisco Systems mentioned that such considerations encouraged the FCC to open a proceeding on the potential for differ-

ential regulation of rural and urban America. George Mason University professor Tom Hazlett pointed out, however, that every carrier, wherever it is located, is affected by larger technological developments and by national and international market forces. Officials therefore would have to proceed with sufficient caution to avoid implementing policies that might unintentionally exacerbate rather than reduce the urban-rural technology gap and discourage rather than encourage competition.

As these two general ideas suggest, there is a consensus that the current spectrum regulation regime needs reform. At least with respect to regulating spectrum now allocated to private firms, none of the Roundtable participants expressed satisfaction about the pace and scope of change. Political forces certainly will influence the policies that ultimately are enacted. Although politics frequently stymies reform, in this arena, at least, the broad agreement on the need to find acceptable compromises offers reason for optimism.



# Telecommunication Convergence

## Introduction: Good News for a Change

In the past few years, the Aspen Institute Annual Conference on Telecommunications Policy frequently has sounded a glum note as profits and the value of telecommunications stocks stagnated (or worse) and policy seemed mired in endless loops of delay and litigation. The atmosphere at the 2005 conference was decidedly more upbeat. Professor Eli Noam of the Columbia University Business School described a series of promising developments that suggest that the blue sky visions of competition and innovation behind the 1996 Telecommunications Act may finally come to at least partial fruition. Propelling this new tone were the explosive growth in broadband penetration, the financial stabilization that should accompany the corporate consolidation of the past year or so, some important policy decisions, and the long-awaited video market entry of large incumbent local exchange carriers (ILECs) spun off from the original AT&T in 1984. Verizon and SBC (renamed AT&T after its merger) are now energetically laying fiber for multichannel, Internet Protocol TV (IPTV) systems. At the same time, Comcast, Time Warner, and other cable companies are building Internet Protocol (IP) backbones in their networks and introducing facilities-based voice competition on a large scale.

Although the conference covered a lot of ground, the major focus, in the words of Charles Firestone, executive director of the Aspen Institute Communications and Society Program, was on “developing a national policy to push broadband availability and take-rates throughout the country.” That general goal incorporates several subsidiary objectives and ramifies into several policy recommendations:

1. **Broadband for all**—a plan for ensuring rapid and expanded competitive deployment of affordable access to broadband throughout the United States while maintaining incentives for continuing investment and technological improvement.
2. **Truth in broadband**—a plan to give consumers more thorough and reliable information for choosing among broadband providers.

3. **Deregulation of local telecommunications**—mechanisms for assessing local competitive conditions to allow deregulation and promote competition and choice.
4. **Protecting intellectual property**—proposals to ensure that public policy recognizes changing technology (especially faster broadband and IPTV) in enforcing copyright protections.
5. **Balancing jurisdictions**—a proposal to establish clear parameters for state and local jurisdiction under the umbrella of a federal policy to further the diffusion and continual upgrading of broadband technology.

### **Hopeful Signs: Toward “2.5 Platforms” (or more)**

Eli Noam began the conference with a moderately optimistic overview of changing conditions in telecommunications. He noted that the financial crisis of the late 1990s seems to have passed, with investment in infrastructure generally increasing since then and consolidation helping to strengthen the remaining players. Among the major mergers have been SBC with AT&T, Verizon with MCI, and Sprint with Nextel. Indexes of market concentration showed substantial increases in 2005, particularly for mobile telephony.

Although greater market concentration typically leads to reduced competition, many observers—and, most important, Wall Street—believed that at least in some markets (such as cell phone service, with five or six national players slugging it out), competition had become a barrier to investment and innovation in telecommunications. They therefore regard consolidation as a positive force. As one measure of the bullish developments in the industry, after a few years of rapid growth, by 2005 fully 38 million households subscribed to a broadband service—meaning that for the first time, more than half of residential Internet users enjoyed broadband access. On the other hand, that penetration level ranked the United States just 16th in the world, and several conference attendees cited the need to improve this situation.

A second positive development is the full-speed-ahead entry of the two largest Bell companies, Verizon and SBC, into the multichannel television market. Verizon is installing fiber to the residential premises and is planning to deliver 300 video channels and extensive video-on-

demand offerings. SBC will install fiber to the neighborhood and then use advanced digital subscriber line (DSL) and IP technology to deliver video and other services. Thus, there will finally be three competitive platforms in provision of multichannel video for much of the country; until now the choice was limited to cable TV and two satellite companies. The major cable systems are marketing telephone service that competes directly with that offered by Verizon, SBC, and other ILECs, marking the end of the landline phone monopoly that had endured for nearly 100 years. Indeed, for residential customers at least, competitive choices in landline voice and video services at long last have begun to resemble the consumer cornucopia promised ever since the 1984 breakup of AT&T.

Beyond the multichannel video market, Verizon and SBC customers will have access to much faster broadband Internet service, featuring speeds akin to those available in countries with more advanced systems. This development has spurred cable companies to research how to obtain speeds of 100 Mbps and greater from their fiber-coaxial architecture. Other aspects of broadband also are experiencing rapid growth, according to Noam. With respect to wireless fidelity broadband service (Wi-Fi), the number of “hotspots” has doubled in one year, and log-ins also have increased markedly. The current trend in broadband appears to be toward heightened interplatform competition between cable TV systems, landline telephone companies (telcos), and wireless offerings. Even long-delayed, higher-speed cellphone data services such as Evolution Data Only (EvDO) are becoming available in more and more markets, offering average download speeds of 300-500 Kbps with bursts of 2.0-2.4 Mbps that make them competitive with many landline DSL and cable modem services. Verizon Wireless is even offering “V-cast”—video (in short segments) to cellphones.

For Kathryn Brown, senior vice president for public policy and external affairs of Verizon Communications, all this transition portends the

**Competitive choices in landline voice and video services at long last have begun to resemble the consumer cornucopia promised ever since the 1984 breakup of AT&T.**

emergence of at least three full-fledged competitive platforms in broadband access, although the competition will vary in strength and nature. For instance, in many areas, Verizon Wireless broadband will be “competing” with Verizon’s own fiber-to-the-premises broadband. On the other hand, as Robert Pepper, senior managing partner for Cisco Systems and longtime chief of policy analysis for the Federal Communications Commission (FCC) pointed out, Verizon Wireless itself will face broadband competition from Sprint, Cingular, and perhaps other wireless carriers.

The sustainability and degree of future competition therefore remain unclear. As Noam observed, competition initially is likely to be concentrated in areas of high residential density. He reminded attendees of

**Countries with 2.5 broadband platforms experience greater volatility, greater dynamism, lower prices, greater investor risk, and less regulation.**

*Eli Noam*

the “fundamental economics of the information sector”—high fixed costs, low marginal costs, commodification, and competition—that “lead to price deflation, failures, and consolidation.” Noam predicted that these forces could produce, for typical urban and suburban communities, a broadband market consisting of “2.5” platform players—the cable system, the telco, and niche wireless providers. For now, multichannel video features two platforms (one of which, direct satellite, has two competitors), although a third major competitor (the ILEC) is on the way in much of the nation. With the entry of cable telephony, the longtime monopoly in landline telephone will transform into a two-player market. Counting cellular as a potential substitute for many consumers, many may have 2.5 players.

Noam noted that a 2.5-competitor market features an “oligopoly in prices while providing some rivalry in innovation and features” and suggested that this degree of competition would be “acceptable to regulators.” Expressing a view that seemed widely held, he concluded, “We’re moving on with the agenda, beyond many of the old policy debates. Now we’re finally talking about how many platforms will be competing for the consumer’s information and entertainment needs,

not debating Unbundled Network Elements (UNE). With media policy and competition policy coming together, we're seeing a real advance in the discussion."

Conferees spent some time discussing whether a 2.5-platform market is as good as it will get, or whether aiming for three or even more fully competitive platforms is realistic. In addition, Noam observed that some countries with 1.5 platforms (Japan, France, Italy, and the United Kingdom, among others) seem to be doing as well as or better than the United States in terms of broadband speed and price. In 1.5-platform countries, there appears to be more need to regulate providers and protect open access; on the other hand, higher prices, larger market shares, and greater profitability for these broadband providers enables greater investment.

Rob Atkinson, vice president and director for technology and the new economy project at the Progressive Policy Institute (PPI), actually urged conference attendees to consider the possibility that 1.5 platforms could be an optimal number, assuming effective regulatory oversight, because resources used to build redundant, competitive broadband pipes could have better uses. Robert Blau, vice president for public policy development of BellSouth, voiced another view. Blau said that what he sees as an already-entrenched two-platform duopoly in broadband is driving prices down and speeds up, without any need for government regulation.

More generally, according to Noam, countries with 2.5 broadband platforms experience greater volatility, greater dynamism, lower prices, greater investor risk, and less regulation. The ".5" segment of the market actually may consist of a range of providers, depending on the service and on customers. Noam predicted that trends in the United States favor a basically duopolistic market structure in which the dominant players will enjoy some pricing power and greater profitability, yielding increased investment in broadband infrastructure and potential gatekeeper power over access and applications. Whether the pricing and gatekeeper power should or will call forth regulation in these areas remains to be seen.

## **Goals**

For reasons that were not clear, this year's conference participants engaged in unusually disputatious discussion of desirable goals for telecommunications policy in light of these developments. Often these

discussions are mere boilerplate affirmations of apple pie and motherhood values; at this year's conference, however, many more participants wanted to raise challenges. Perhaps this debate is healthy. It might be yet another indicator of progress: Perhaps the reason for the volume of debate is that people sense that we are finally making progress toward economic and social goals and that goal setting therefore is no longer merely an abstract exercise.

To oversimplify slightly, a few conferees felt that economic efficiency encompasses nearly every desirable economic goal, including openness of networks, and that social goals should be limited to national security/public safety and some form of universal service. These participants

**The overriding goals are economic efficiency, along with its close corollary of maintaining open platforms, and expanding universal service to include some form of broadband.**

tended to oppose a more detailed list of goals. Representing this perspective was Bob Blau of BellSouth, who observed, "The Internet is the most open network we've ever had, and the most unregulated. If you inject a long list of goals, will that be an excuse to regulate something that doesn't need it?" To some extent, the divide over stating detailed goals reflected perceptions of the success of the 1996 Telecommunications Act. Some participants, such as James Gattuso, research fellow at the Heritage Foundation, argued that there has been a lot of progress in meeting the

act's goals of reducing regulation and expanding competition. Others insisted that the goals have not been met in many respects or that additional goals need to be embedded in legislation.

Most attendees seemed to prefer stating a more comprehensive set of economic objectives, including reasonable prices, meaningful competition, removing barriers to entry, preserving the open character of the Internet and promoting the free flow of information, assuring interoperability and interconnection, and optimizing use of the spectrum. Those opposed to stating these goals explicitly generally believed that enunciating specific objectives that should be attainable more or less

automatically if we keep our eye on the ball of economic efficiency would be redundant and potentially dysfunctional.

Social goals were even more controversial, although some generally received substantial support: promoting the democratic process and free information flow; access to a diversity of information sources; access to broadband for all Americans, wherever they live and regardless of their economic status or physical disabilities; promoting national security and safety of the public's lives and property (the conference occurred a few weeks before Hurricane Katrina exposed, yet again, critical problems with public safety communications in the United States); encouragement of innovation and creativity; and consumer protection.

Although the conference participants reached no consensus on a detailed statement of all desirable goals for telecommunications policy, the focus of most discussion suggested general agreement that the overriding goals are economic efficiency, along with its close corollary of maintaining open platforms, and expanding universal service to include some form of broadband. To the extent that other social goals beyond universal service received attention, there was considerable concern with promoting democracy and citizenship through new media technologies. This democratic goal dovetailed both with the nominally economic goal of maintaining open platforms to maximize consumer choice and, of course, with the social goal of enhancing universal service to include affordable access to broadband.

### **A New Telecommunications Act?**

Is seeking a new or substantially amended Telecommunications Act that recognizes these trends prudent? Or can most objectives be accomplished without going through the onerous and even treacherous process of passing new legislation? Many conference participants felt that existing law and authority allow policymakers to achieve almost all of the key objectives discussed at the conference. They argued that the legislative process opens a potential Pandora's box of perverse and unintended (or even intended) consequences. For these participants, the lower-risk, higher-gain strategy is to work within the existing regulatory system. Others, however, felt that the time is right for a new

**The legislative process opens a potential Pandora's box.**

Telecommunications Act and that only new legislation can harmonize and refine telecommunications policy to ensure positive economic and social outcomes. Perhaps confident that the aforementioned trends are so unstoppable and so clearly call out for explicit recognition in law, these attendees argued for getting a proactive bill on the books while the political stars appear to be potentially in alignment. For instance, Jeff Brueggeman, vice president for external affairs at SBC, noted that his firm believes that federal legislation is important to ensuring that its new IP video service will not be saddled with legacy cable legislation—a move some cable companies and municipalities support.

Ultimately, while taking note of the Ensign bill (the Broadband Investment and Consumer Choice Act of 2005), conference participants could make no recommendation and preferred instead to state policy objectives that most felt can be accomplished without congressional approval. In the words of Steven Teplitz, vice president and associate general counsel of Time Warner, “Most of us seem to agree that we don’t need a broad rewrite of the Telecommunication Act but rather that there’s been considerable progress, which means a lot can be done without a rewrite.” Others, however, observed that some important objectives, such as streamlining market entry for new video services, arguably do require a rewrite.

Two recommendations for amending the 1996 Telecommunications Act did receive support from many participants:

- It should be amended to ensure that people with disabilities have access to broadband Internet access services where they are available.
- It should be amended to enable domestic law enforcement agencies to bring enforcement actions dealing with instances of Internet malfeasance by organizations or individuals operating outside the United States. More specifically, Congress should make necessary changes in the law to ensure that the Federal Trade Commission (FTC) and other appropriate domestic agencies can share confidential information with their foreign counterparts regarding activities such as “phishing,” spyware, and spam.

Conference participants had no time to delve into detail on these specific provisions or on political strategy to pursue them.



Furthermore, any attempt to amend the legislation even for these narrow purposes could open the doors to further legislative tinkering that might yield unfavorable outcomes, as well as possibly spawning yet another cycle of rulemaking, comment, and litigation that spells delay and higher costs. Of course, this scenario is the reason for the majority's lukewarm response to the whole idea of going through the legislative process in the first place.

### **Broadband for All**

There was a general sense among conference participants that universal service has to be reconceived for the 21st century. The goal no longer is limited to ensuring that virtually everyone can obtain voice telephony; the new goal should be ready access to affordable broadband for everyone who wants it. Several participants emphasized the democratizing potential of broadband communication, including availability of the exploding capacities of the Internet. In the words of one conference working group, the goal is that "all Americans have access to broadband service, comparable to how all Americans have access to phone service today," while assuring that this access would be achieved (unlike for traditional voice universal service) "in an economically efficient manner."

**Universal service has to be reconceived for the 21st century.**

Considerable support emerged for changing the very name of universal service to highlight the genuine transformation of telecommunications policy entailed in making broadband rather than plain old telephone service (POTS) its central goal. Although a few humorous suggestions were tossed out, Joe Waz, vice president of Comcast Corporation, suggested "broadband for all" (BFA) as the way to label the new universal service paradigm; this moniker seems to be appropriate. The core issues are as follows:

- Exactly what should be funded
- How should funds be collected
- How should funds be distributed.

The working group did suggest the following definition for BFA: As a general matter, 100 percent of the country should have access to broadband speeds equivalent to a to-be-determined percentage of what half of residential customers receive (a constantly increasing standard), at prices set in accordance with the average residential price. There was no consensus on whether a policy with explicit timetables and benchmarks should be included in new legislation or whether BFA goals can be attained without congressional action. There was agree-

**The FCC must collect, on an ongoing basis, reliable and comprehensive data on broadband availability and penetration.**

ment, however, that the FCC must collect, on an ongoing basis, reliable and comprehensive data on broadband availability and penetration—something it does not now do. These data are essential to measure progress toward the goal of universal affordable broadband access.

Consider one example of how a new BFA policy might work: If 50 percent of (unsubsidized) broadband subscribers receive speeds of 1.5 Mbps

or more, at an average cost of \$40 per month, the BFA goal might be to make at least 750 Kbps service accessible to everyone for no more than \$20. The goal would become a moving target as technology improves. In practice the goal might be dynamic, set by a process of monitoring and perhaps annual updating. Measurement of progress toward the (constantly moving) goal and adjustment of subsidies would require continual attention.

With respect to funding, the recommended new policy would support only the gap between what consumers are willing to pay and the actual cost of providing service. The national average price could be used as a benchmark for setting a subsidy level. Subsidies would flow only to consumers with economic need, rather than for the supply side—ending a history of poorly reasoned, inefficient subsidies to network providers.

The key financial question involves managing the transition from subsidizing voice to subsidizing broadband. As Blair Levin, managing partner at Legg Mason, pointed out, in time “broadband will be for this century what voice was to the last.” This observation implies the need to fix

the current Universal Service Fund (USF) system for voice, which is in a state of serious disrepair (a matter analyzed at length in the report from the 2004 conference).<sup>7</sup> The fix will require broadening the base of contributions, reforming traditional intercarrier compensation mechanisms, and moving toward competitively set prices for voice telephony rather than artificially low prices in rural areas because of large subsidies.

One funding idea floated was to have providers of applications that rely on broadband—and improved broadband penetration—such as Voice over Internet Protocol (VoIP) phone service (e.g., Vonage) and Google’s search and other services, pay into a USF. Other participants argued, however, that this arrangement would be counterproductive. For instance, determining exactly what constitutes an application for this purpose would be nightmarish because an ever-changing array of software programs and websites that rely on broadband for effective use would have to be assessed and categorized. Robert Atkinson of the Progressive Policy Institute suggested that “the more elegant solution would be allowing states to collect a sales tax on e-commerce, with some portion going to support broadband deployment.” This tax would be relatively progressive, he said, and it would be easier to administer. Most important, Atkinson argued, taxing broadband itself would slow diffusion and thus work against the very goal of BFA.

Although the larger group reached no consensus on an e-commerce tax or USF payments from application providers, it did agree that revenues for a broadband USF should come from as broad an economic base as possible. Participants also generally concurred on the proposition that federal regulation should supersede state authority in administering the new USF because broadband is inherently an interstate service.

On the assumption that analog TV spectrum will become available to large national licensees offering wireless broadband but that these firms initially will concentrate on high-density markets, the working group also proposed a loan program for broadband build-out. The goal would be to stimulate accelerated investment in deployment of broad-

**Subsidies would flow only to consumers with economic need, ending a history of poorly reasoned, inefficient subsidies to network providers.**

band throughout the country. The group emphasized government-supported *loans* to support entry or build-out, rather than *grants* that might enable new competitors to enter a market, even if such competitors theoretically might drive prices down and reduce the need for subsidies. The policy might piggyback on the existing Rural Utilities Service (RUS) program, which already offers low-interest loans for

**“The question of whether private deployment is ‘fast enough’ is a political question, and politicians should decide it.”**

*Cheryl Leanza*

rural telecommunications facilities. The working group also supported making municipalities that seek to build broadband facilities eligible for the loans. This proposal met with mixed responses from the larger group; some participants dissented from government promotion of broadband entry or competition through loan programs, although as Joe Waz of Comcast observed, funding could be restricted to “unserved” areas. Citing the prototypical resident of semi-isolated but affluent Aspen, Colorado, Dale Hatfield, consultant and adjunct professor at the University of Colorado-Boulder, warned that without some form of means testing, broadband USF programs could wind up directly or, through loan programs, indirectly subsidizing rural users who could afford the full cost of service. Legg Mason’s Levin responded that subsidies in the form of loan guarantees or below-market interest rates should *not* simply be passed through as high returns and high dividends to (often affluent) stockholders in rural firms. Exactly how this type of program could be accomplished in practice is unclear, however. With regard to user subsidies, Levin suggested that the FCC could decide if and when broadband subsidies were going to the wrong people, perhaps instituting a lifeline-style, means-tested subsidy explicitly targeted to low-income users.

The larger, hotter issue of municipal provision of broadband systems generated a surprising degree of agreement. Allen Hammond, professor of law at Santa Clara University, voiced a generally held sentiment in arguing that municipal broadband networks (MBNs) should be permitted but should not be funded through taxes on private broadband

providers. Some industry participants, however, were concerned about MBNs receiving preferential treatment compared with commercial providers in a way that could distort competition. Anna-Maria Kovacs, president of Regulatory Source Associates, was among those who questioned the justification for having local governments build MBNs to compete with private firms. There was substantial support, however, for the rejoinders of Hammond and of Federal Trade Commissioner Jon Leibowitz. Hammond pointed to the “long history of government provision where there’s a need,” including services such as water and schools, which have private market substitutes. Leibowitz noted that if citizens of a municipality do not like what their officials are doing with respect to MBNs, they can vote them out of office, just as they can for any other reason.

Expanding on this point, Cheryl Leanza, principal legislative counsel for telecommunications, policy, and federal relations for the National League of Cities, argued that cities presumably would not set up MBNs capriciously. Instead, she said, such networks would arise where the private market was offering inferior, overpriced, or seriously delayed service to significant parts or all of the community. “The question of whether private deployment is ‘fast enough’ is a political question, and politicians should decide it,” she said. “The city decision affects only the city, and if it does deter private investment there, citizens can vote officials out.”

Hammond and others did raise the possibility that bad decisions by municipalities might disrupt the larger national goal of rapidly deploying ubiquitous, innovative, and interconnected broadband networks. Certainly some cities might install badly designed systems that provide poorer service and entail higher costs than better-designed private systems—and that those private systems might never get built once the municipal system goes up. In any case, decisions on allowing or disallowing municipalities to establish MBNs currently are made by the states, and conference participants generally felt that such decisions should remain at the state rather than federal level.

### **Consumer Protection: Truth in Broadband**

Another working group came to nearly unanimous agreement on an initiative it dubbed “truth in broadband.” Given the difficulties consumers currently face in assessing the quality of access offerings and determining the adequacy of that performance in various applications

(e.g., interactive games and VoIP), the group decided to focus on enhancing consumer information in broadband Internet access. The goals of the initiative would be to measure and publicize the actual performance of broadband Internet access networks, allowing consumers (or reviewer/informants such as *Consumer Reports* or ZDNet.com) to make more objective and informed comparisons among offerings. The

**An independent, neutral, standards-making body should create standards for key performance metrics.**

initiative also would enable consumers to better detect quality discrimination (as opposed to price discrimination) in provision of Internet access services, while allowing the FCC to gather more accurate information for its purposes. These ideas received essentially consensus support from conference attendees.

Service providers often supply performance metrics on products or services on a voluntary basis; in many cases, however, the absence of standardized measures prevents consumers from objectively comparing products. Examples of objective comparative information in other industries provided to consumers include expected life labeling on light bulbs, energy efficiency labels on appliances, airline on-time and baggage performance information, and motor vehicle fuel efficiency.

With these precedents in mind, the working group recommended that an independent, neutral, standards-making body such as the Institute of Electrical and Electronics Engineers (IEEE) or the International Engineering Task Force (IETF) create standards for key performance metrics (e.g., bandwidth or speed, latency, and jitter), including prescribed definitions and standard measurement techniques. The group also recommended that, in developing the required standards, the independent body should ensure that the metrics and associated measurement techniques are neutral across competing broadband access platforms. The group emphasized that standards must be readily translated into terms that ordinary consumers can understand. Jargon and complicated, obscure quantitative measures will not accomplish the objectives of this initiative.

The group decided against recommending minimum performance standards. Internet performance as experienced by a given customer

can be affected by many factors outside the access provider or equipment maker's control, such as general congestion on the Internet or at a specific website. Instead, the group emphasized properly defining, measuring, and publicizing standardized performance metrics. Although the larger conference group agreed that providers of broadband access should adopt such standards, only a minority felt that use of the standards should be mandatory. The presumption is that the market would naturally reward voluntary compliance because consumers would favor vendors that make objective performance data available.

### Local Telecommunications Deregulation

Another working group was charged with developing proposed standards and procedures for deregulating local telecommunications, with particular attention to the landline residential and business voice telephony services of the ILECs and to cable television's retail rates. The group came up with two options for assessing the state of market competition and then deregulating residential voice telephony in a particular area. Both require that carriers not engage in price discrimination among residents in the area.

- Option 1: Deregulate all ILEC retail rates as long as meaningful substitute services are available to at least 80 percent of residents throughout the market area. "Meaningful substitute services" must offer E911 equal to that provided by the ILEC, as well as customer service and pricing comparable to the ILEC.
- Option 2: Maintain a low regulated rate for basic voice and deregulate other retail rates. One carrier of last resort would offer this guaranteed low-price basic voice telephony for the indefinite future. Any qualified carrier could apply to be this carrier of last resort. It would receive subsidies based on actual costs of providing service to high-cost areas.

**“How do you get consumers more bandwidth for less money?”**

***Jonathan Adelstein***

Kathryn Brown of Verizon noted that her company, at least, could support the second option as a way to remove political objections to reforming local pricing and other regulation. She said that Verizon could simply agree to maintain a very low basic local phone rate indefinitely, for the benefit of the ever-shrinking minority of consumers who remain uninterested in more advanced services, in exchange for freedom from regulation for all its other services.<sup>8</sup> Jeff Brueggeman of SBC suggested his company also supports this approach and pointed to one

**“Even if in the consumer environment options are growing, the opposite is happening for large business customers.”**

*Laurel Kamen*

state (Missouri) that has adopted something similar. With these exceptions, however, this option generated little support, although it certainly appears to be a straightforward way of balancing political pressures for inexpensive basic phone service against the growing economic necessity of replacing unsustainable local rate structures that have traditionally propped up low basic rates.

The first option—deregulating only after attainment of a certain competition threshold—attracted considerably more support among the larger group. Conference participants discussed exactly how to measure “meaningful substitutes,” but they did not settle on specific standards. Nonetheless, most attendees clearly preferred that government remain involved in assessing competitive conditions before deregulating ILECs’ local voice services, rather than (as in Option 2) deregulating ILECs wherever a guaranteed low basic rate is available, irrespective of competitive conditions.

David Honig, executive director of the Minority Media and Telecommunications Council, asked what would happen, assuming an 80 percent threshold were in place, to the 20 percent of consumers who did *not* have a competitive alternative. These consumers might be expected to be residents of poorer neighborhoods who can least afford monopoly prices. Alexandra (Sandy) Wilson, vice president of Cox Enterprises, responded that a nondiscrimination provision would protect them: Everyone throughout the market area would get the same, market-set price offered to the 80 percent of households that do have



the competitive choices. Bob Blau of BellSouth pointed out that several states already have programs similar to this option.

Jeanine Kenney, senior policy analyst with Consumers Union, voiced concern, however, about consumers being forced to take bundled services. Kenney asked, "If you have a duopoly and both carriers require customers to take a bundle, how do you determine that there is meaningful substitute service?" Forced bundling would leave consumers who simply want stand-alone voice service out in the cold, without a true choice. Therefore, as Sandy Wilson said, the rules should always allow customers to buy unbundled voice. It is difficult to see, however, how regulators could ensure that charges for unbundled voice service were actually set at a competitive level. That issue raised the possibility of combining Options 1 and 2, as suggested by Cheryl Leanza of the National League of Cities. She proposed having a test for competition before deregulating, in combination with a guaranteed low rate for basic voice service. Although that idea did not receive much scrutiny by conference participants, it seems worthy of further consideration.

More contentious was the question of whether and when to deregulate carrier-to-carrier rates. Laurel Kamen, a vice president at American Express, cited a "counterintuitive digital divide" afflicting enterprise users. Kamen said that far from seeing expanded choice of carriers, firms such as AmEx find options shrinking with consolidation of the industry. "Large enterprise users need high quality and redundancy; we need special access with prices and terms that must be regulated. Even if in the consumer environment options are growing, the opposite is happening for large business customers." The former long distance giants, such as AT&T and MCI, have been absorbed by ILECs, and, as University of Colorado-Boulder professor Dale Hatfield noted, the once highly touted competitive local exchange carriers (CLECs) have fallen on hard times and offer far less competition than the 1996 Telecommunications Act envisioned. Ironically, then, as Charles Firestone of the Aspen Institute pointed out, we appear to have reached a point where business customers—long assumed to benefit from flourishing market competition—are enjoying less of it than residential consumers.

According to Kamen, although "in some places we do have choices and it's working fine, in a majority of locations we have no choices." She said that AmEx has issued Requests for Proposals for special access services that have generated no responses at all. As FCC Commissioner

Jonathan Adelstein pointed out, the same may hold true of broadband services. For security and other reasons, businesses tend to be skeptical of wireless broadband. Therefore—and again somewhat ironically—unlike for residential consumers, the “2.5” player market in broadband

**Where equal bargaining power exists, the Commission would forbear from regulating carrier-to-carrier rates.**

may not apply for large businesses. Several conference participants begged to differ with this portrayal, however, asserting that any such problems are short term and transitional. For example, Sandy Wilson of Cox Enterprises said that her firm’s business services division is aggressively pursuing business customers now. Comcast’s Joe Waz indicated that his company, the largest cable operator, initially is emphasizing its residential VoIP service but can be

expected to target business customers in time. Lee Schroeder, vice president of government affairs for Cablevision Systems, echoed the point for her firm.

Indeed, cable firms presumably will want to generate revenue from their enormous investments in facilities by serving business customers. On the other hand, Kamen reminded the group that large businesses such as AmEx, and many others, have demands for security, quality, redundancy, and the like that far exceed what cable systems typically offer residential customers, and one cable participant acknowledged that cable telephony may not yet be able to offer special access service that meets ILEC standards and large enterprise customers’ needs. Furthermore, as Jonathan Adelstein said, in rural, less densely populated areas, businesses have less prospect of finding effective competitive alternatives.

In light of these conditions, the group discussed possible timing for deregulation of local carrier-to-carrier rates. The prime criterion suggested was the existence of symmetrical bargaining power between carriers. Presumably, for instance, in markets where cable systems are offering service that seriously competes with ILEC offerings, a kind of bargaining standoff will arise. Both sides will have strong incentives to negotiate interconnection and rates that are fair to each; neither would want to get into a destructive conflict that would render their service

less valuable to customers. Furthermore, as Anna-Maria Kovacs of Regulatory Source Associates observed, both sides also are likely to be competing in the video market and could threaten competitive moves there to bolster their positions in telephony. Using this “mutually assured destruction” or balance-of-power criterion, the FCC would evaluate firm-to-firm relationships in specific markets. Where equal bargaining power exists, the Commission would forbear from regulating carrier-to-carrier rates.

For firms and markets that are not characterized by symmetrical bargaining power, participants still proposed to substantially deregulate carrier-to-carrier rates, but with an important caveat: require mandatory arbitration where carrier-to-carrier negotiations fail. The deregulatory regime would require that rates and terms offered to one carrier, including an adjacent ILEC, must be offered all carriers and that carriers make their current rates, terms, and arrangements available as a default, with the option of negotiating different rates.

That was as far as the group got. Participants did not settle on precise criteria the FCC should use in evaluating equality of bargaining power, nor were options determined for the transition period from the mandatory arbitration regime to full deregulation. Nonetheless, this proposal clearly resonated with many conference participants and points the way to a future regulatory reform that is based on changing economic conditions. It also suggests a challenge to any assumption that in protecting against monopoly in telecommunications, regulators should concern themselves only with the residential market.

With regard to cable systems, the group tilted in a somewhat different direction, saying that the burden of proof should be placed on parties that want to continue regulation of the basic cable rate. Most conference participants thought that rate deregulation should apply where the cable system in an area has one competitor delivering comparable service that can reach more than 80 percent of the area. In practice, the large majority of consumers already live in such areas because they can receive multichannel video from one or both direct broadcast satellite services. Many more will soon be able to receive IPTV from their ILEC.

Given current competitive conditions, and given that most cable subscribers go beyond basic service—which typically offers local broadcast signals and perhaps a few of the less expensive cable networks (such as C-SPAN and Home Shopping Network)—deregulation of basic rates

may be more symbolic than a substantive issue. After all, most people can receive basic broadcast TV service at no charge if they use an antenna, and this availability disciplines basic cable prices. In any case, basic cable rate deregulation appears to attract widespread support given that most Americans have access to a reasonably competitive environment for multichannel video, especially considering the availability of most popular TV shows and movies on DVD or VHS for inexpensive rental or purchase, as well as other Internet and wireless-based alternatives.

### **Protecting Intellectual Property in the Context of IPTV**

Two copyright issues arise from growing broadband deployment. The first pertains to applying Section 111 of the U.S. Copyright Act to IPTV—the technology telcos are using for multichannel video over their fiber networks. Cable television systems currently obtain a compulsory license under Section 111 to distribute certain television programs, paying royalty fees that are set under government rules. This provision treats cable network distribution of programs differently from broadcast distribution of the same programs. Broadcasters do not get compulsory licenses and must negotiate fees for transmitting programs directly with their owners. The open question now is whether Section 111 covers IPTV and grants it a cable-style compulsory license. Of the two large ILECs now deploying IPTV, SBC says its IPTV technology is *not* an equivalent to cable TV, although it nevertheless is covered by Section 111, whereas Verizon says its service *is* equivalent to cable and as such is covered by Section 111.

One option—favored strongly by Preston Padden, executive vice president of ABC/Disney—would be to repeal compulsory license provisions altogether and subject all video programming to private negotiation and contract. The other would be to support a provision of the Broadband Investment and Consumer Choice Act, introduced by Sen. John Ensign (R-Nev.) that (among many other things) extends Section 111 to “all video service providers.” Although the conference participants did not take a stand on the issue, the spirit of the deliberations clearly was in the direction of favoring equal regulatory treatment of equivalent services, which would be compatible with either option—compulsory licenses for all or private negotiation for all.

A second intellectual property issue arises from the ease with which broadband allows duplication of copyrighted material through person-

to-person (P2P) file sharing over the Internet. In light of broadband's growing penetration and increasing speeds, P2P sharing and copyright violations could grow. The Digital Millennium Copyright Act (DMCA) provides a "safe harbor" for internet service providers (ISPs) with respect to such violations. It absolves them of liability for P2P copyright infringements by their subscribers. However, the act (Sec. 512(i)(1)) also states, "The limitations on liability...shall apply...only if the service provider...has adopted and reasonably implemented...a policy that provides for the termination...of subscribers...who are repeat infringers..." Some critics feel that the telco ISPs in particular have enjoyed the benefit of the safe harbor from liability without having "adopted and reasonably implemented" a policy of disconnecting repeat infringers. Conference participants generally felt that cable ISPs have more rigorously enforced such policies.

**Equal regulatory treatment of equivalent services means compulsory licenses for all or private negotiation for all.**

One participant called for requiring ISPs to send a warning to copyright violators (usually, those uploading movies and other large files) when a content provider notifies the ISP that a pirate is using one of the ISP's internet protocol (IP) addresses. If the user ignores the warning, the ISP would be required to restrict the user's bandwidth and, if the violation continues, to disconnect the user. ISPs that demonstrate a pattern of failure to enforce this regime would lose their safe harbor immunity, becoming liable for copyright violations by their subscribers. Many observers fear the "Big Brother" aspects of having content providers track and report the usage patterns of individual subscribers to ISPs and then demanding that the ISP police them. Recognizing nonetheless the legitimate need to protect intellectual property rights, they called for a second option: negotiations between content providers and ISPs to develop a policy that balances copyright holders' rights with content users' and citizens' rights.

### **Balancing Jurisdictions**

One of the most venerable discussions at the Aspen Conferences on Telecommunications Policy has centered on rationalizing the tradition-

al split of jurisdiction over telecommunications regulation among federal, state, and local governments. New developments lent somewhat greater impetus to the discussion at the 2005 gathering: the entry of telcos into multichannel video with their IPTV services and the entry of municipalities into broadband network provision. In particular, the telcos do not want to be subject to state or local franchise obligations of the type that cover other cable television systems, whereas some states and localities believe they should exert jurisdiction. From the perspective of cable companies, treating telcos' IPTV services differently gives telcos an unfair competitive advantage and violates the general principle that public policy should treat like services similarly.

**“...we need the federal government to set national standards if we are to have similar regulatory treatment across different services.”**

*Sandy Wilson*

As Sandy Wilson of Cox Enterprises said, “We are seeing fewer players providing more national services, and that means we need the federal government to set national standards if we are to have similar regulatory treatment across different services.” As one of the conference working groups noted, the number of national services is increasing, and policymakers' ability to distinguish local service from intrastate or interstate service is decreasing. Hence, old standards and justifications for allocating jurisdiction

make less and less sense and can lead to more and more problems. A national broadband infrastructure raises a need for national review and uniformity of treatment for its components.

Conference participants generally seemed to be amenable to a proposal for a federal/state partnership that would:

- Permit states to implement federal goals, with flexibility to legislate beyond federal minimums in certain circumstances (such as universal service)
- Have federal jurisdiction preempt state regulations if the FCC concludes that enforcement of the state regulations would prevent federal rules from being applied to interstate communications

- Limit the FCC's ability to preempt so that the Commission could displace state regulation only to the extent necessary to protect its interstate jurisdiction.

Where local jurisdiction winds up in this vision is not entirely clear, but conference participants were generally amenable to having local government similarly restricted from enacting regulations that disrupt national policy, while maintaining their traditional roles in protecting local rights-of-way.

## Conclusion

Asked to provide a summary theme for the conference, FCC Commissioner Adelstein offered: "How do you get consumers more bandwidth for less money?" That question encompasses protecting and informing consumers as well as promoting national diffusion and continuing upgrading of broadband so that Americans don't fall further behind in terms of "bandwidth for the buck" relative to rest of the world. As usual, asking the question is easier than answering it by coming up with foolproof policy solutions. In the words of Intel Senior Fellow Kevin Kahn, "Policymakers don't want to 'shoot behind the duck'; they don't want to be catching up to last year's problem. They have to make policy based on what we think the network will be like in 10 years." That vision is a pretty tall order, of course. In the shorter term, Blair Levin of Legg Mason suggested, by the end of 2006 we can expect "a different market structure, no interexchange (long distance) companies, and more consolidation." With regard to how many competing platforms typically will characterize this market structure, Levin commented, "Perhaps bundles from cable and telcos broadband will be so compelling that wireless won't be a real alternative, but on the other hand, maybe wireless will be a robust competitor."

This short-term scenario suggests that as telcos expand into video and cable systems expand into telephony, we can confidently predict—at least for urban and suburban areas—a two-platform broadband,

**"Policymakers...  
have to make policy  
based on what we  
think the network  
will be like in  
10 years."**

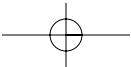
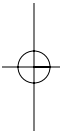
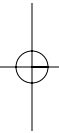
***Kevin Kahn***

multiproduct video, data, and voice market. Add cellphone service at least for voice in the same areas, and we reach a 2.5 platform market for voice within a year. With direct broadcast satellite (DBS), arguably, there will be a full-fledged three-platform market in video once ILECs roll out their video services. Assuming further that cellular providers and DBS will enhance their broadband services, we can readily envision something like a 2.5 or even 3-platform broadband market. For some conference participants, that would be achievement enough because it almost certainly will entail increased economic efficiency. For others, there are further social policy goals that David Honig of the Minority Media and Telecommunications Council summarized: "We're here to sustain democracy, and it's at risk if a new technology is more available to some than others. First class citizenship requires affordable broadband." Although not every conference participant liked the idea of explicitly pursuing such a social goal, just about all would endorse the observation by Jeanine Kenney of Consumers Union that "the need for a coherent national broadband policy, something we don't have now, underlies all the issues we've touched on."



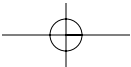
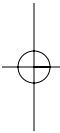
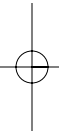
## Endnotes

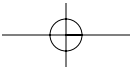
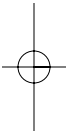
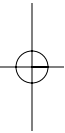
1. Jerry Kang, "Trojan Horses of Race," 118 *Harvard Law Review*, 1489 (2005).
2. Hendricks provided the following figures: As of May 2005 there were 84 city and regional wireless broadband networks that provide public access—34 in the United States and 50 outside the United States. There also were 33 citywide networks used for municipal purposes (29 in the United States and 4 elsewhere). In addition, Hendricks reported, there are 19 city hotzones in the United States and 15 in foreign cities.
3. For information on the RUS see <http://www.usda.gov/rus/telecom/index.htm>.
4. Dewayne Hendricks strongly dissented from the idea that pilot testing is needed, citing the large number of viable wireless broadband systems already in operation around the country (see data in note 2).
5. Robert Pepper of Cisco Systems pointed out that some rural communities enjoy availability of higher-speed broadband than some suburban or exurban townships. No single generalization fits every case.
6. See "A New Generation of Innovation," Executive Summary, April 2004, p. 3, available at [http://www.whitehouse.gov/infocus/technology/economic\\_policy200404/innovation.pdf](http://www.whitehouse.gov/infocus/technology/economic_policy200404/innovation.pdf).
7. Robert M. Entmann, *Reforming Telecommunications Regulation* (Washington, D.C.: The Aspen Institute, 2005).
8. The largest distortion in current regulatory practice may arise from carrier access charges for intrastate calls. Most of these charges, which can range up to 30 cents per minute, go to subsidize local rates. See the 2004 conference report, *Reforming Telecommunications Regulation*, for a discussion of the problem.





# APPENDIX





Aspen Institute Roundtable on Spectrum Policy (AIRS)

***Spectrum in Transition:  
Policy Options for the Uses of  
Rural and Broadcasting Spectrum***

June 15-16, 2005  
Aspen Wye River Conference Centers  
Queenstown, Maryland

**Roundtable Participants**

**Jonathan S. Adelstein**  
Commissioner  
Federal Communications  
Commission

**Mary L. Brown**  
Senior Telecommunications  
Policy Counsel  
Worldwide Government Affairs  
Cisco Systems, Inc.

**Michael Calabrese**  
Director  
Spectrum Policy Program  
New America Foundation

**Robert M. Entman (Rapporteur)**  
Professor  
Department of Communication  
North Carolina State University

**Charles M. Firestone**  
Executive Director  
Communications and Society  
Program  
The Aspen Institute

**Brian F. Fontes**  
Vice President  
Federal Relations  
Cingular Wireless

**Michael D. Gallagher**  
Assistant Secretary of Commerce  
for Communications and  
Information  
National Telecommunications  
and Information Administration

**Steven Glik**  
Senior Equity Research Analyst  
Telecom, Cable and Satellite  
Credit Suisse First Boston  
Corporation

**Dale N. Hatfield**  
Independent Consultant and  
Adjunct Professor  
Interdisciplinary  
Telecommunications  
Program  
University of Colorado-Boulder

Note: Titles and affiliations are as of the date of the conference.

**Thomas W. Hazlett**

Senior Fellow  
Manhattan Institute for Policy  
Research

**Dewayne Hendricks**

Chief Executive Officer  
The Dandin Group, Inc.

**Kevin C. Kahn**

Intel Senior Fellow  
and  
Director  
Communications Technology Lab  
Intel Corporation

**Jeannine Kenney**

Senior Policy Analyst  
Consumers Union

**Julius P. Knapp**

Deputy Chief  
Office of Engineering and  
Technology  
Federal Communications  
Commission

**Jane Mago**

Senior Vice President and  
General Counsel  
Legal and Regulatory Affairs  
National Association of  
Broadcasters

**Eli Noam**

Director  
Columbia Institute for Tele-  
Information and  
Professor of Economics and  
Finance  
Columbia Business School  
Columbia University

**Preston Padden**

Executive Vice President  
Government Relations  
The Walt Disney Company

**Robert Pepper**

Chief  
Policy Development  
Federal Communications  
Commission

**Araba Sey**

Ph.D. Candidate  
Annenberg School of  
Communications  
University of Southern California

**Steve B. Sharkey**

Director, Spectrum and  
Standards Strategy  
Motorola, Inc.

**William Webb**

Head  
Corporate Research &  
Development  
Ofcom

Note: Titles and affiliations are as of the date of the conference.

*Staff:*

**Angelica Compton**

Intern

Communications and Society  
Program

The Aspen Institute

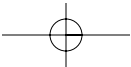
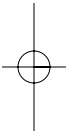
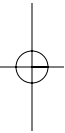
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Project Manager

Communications and Society  
Program

The Aspen Institute

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Twentieth Annual Aspen Institute  
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***Blueprint for a Rewrite:  
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Vice President and Director  
Technology and New Economy  
Project  
Progressive Policy Institute

**Carole V. Bell**

Ph.D. Student and Roy H. Park  
Fellow  
School of Journalism and Mass  
Communication  
University of North Carolina  
at Chapel Hill

**Robert Blau**

Vice President  
Public Policy Development  
BellSouth

**Kathryn C. Brown**

Senior Vice President  
Public Policy and External Affairs  
Verizon Communications

**Jeff Brueggeman**

Vice President, External Affairs  
SBC Telecommunications, Inc.

**Robert M. Entman (Rapporteur)**

Professor  
Department of Communication  
North Carolina State University

**Charles M. Firestone**

Executive Director  
Communications and Society  
Program  
The Aspen Institute

**James L. Gattuso**

Research Fellow in Regulatory  
Policy  
Roe Institute for Economic Policy  
Studies  
Heritage Foundation

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**Daniel Gonzalez**

Chief of Staff  
Federal Communications  
Commission

**Allen S. Hammond**

Professor of Law  
Santa Clara University

**Dale N. Hatfield**

Independent Consultant  
and  
Adjunct Professor  
Interdisciplinary  
Telecommunications Program  
University of Colorado-Boulder

**Kevin Hess**

Vice President  
Federal Affairs  
TDS Telecom

**David Honig**

Executive Director  
Minority Media and  
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**Kevin Kahn**

Intel Senior Fellow  
and  
Director  
Communications Technology Lab  
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**Laurel Kamen**

Vice President  
Government and Consumer  
Affairs  
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**Jeannine Kenney**

Senior Policy Analyst  
Consumers Union

**Anna-Maria Kovacs**

Founder and President  
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Principal Legislative Counsel for  
Telecommunications, Policy,  
and Federal Relations  
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and  
Professor of Economics and  
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Director, Spectrum and  
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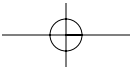
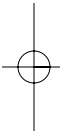
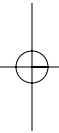
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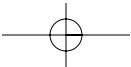
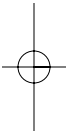
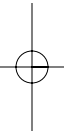
Project Manager  
Communications and Society  
Program  
The Aspen Institute

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## About the Author

**Robert M. Entman** is J. B. and M. C. Shapiro Professor of Media and Public Affairs at George Washington University. He earned a Ph.D. in political science as a National Science Foundation Fellow at Yale and taught previously at Duke, Northwestern, and North Carolina State University. His most recent books include *Projections of Power: Framing News, Public Opinion, and U.S. Foreign Policy* (University of Chicago, 2004); *Mediated Politics: Communication in the Future of Democracy* (Cambridge University Press, 2001; edited with Lance Bennett), which will be published in Chinese translation by Tsinghua University Press in 2006; and *The Black Image in the White Mind: Media and Race in America* (University of Chicago Press, 2000; with A. Rojecki), which won several awards, including Harvard's Goldsmith Book Prize and the Lane Award from the American Political Science Association. He won the 2005 Woolbert Research Prize from the National Communication Association for his work on media framing. He is currently writing a book called *Media Bias Scandals* and, with Clay Steinman, is editing an anthology called *Key Works in Communication Studies*. He also edits the book series *Communication, Society and Politics* (with Lance Bennett) for Cambridge University Press, and he has written dozens of reports on telecommunications policy for the Aspen Institute and other organizations. Dr. Entman has been a visiting professor at Harvard and the University of Rome.



## Previous Publications from the Aspen Institute Conferences on Telecommunications and Spectrum Policy

*The following publications were all authored by Robert M. Entman*

### *Reforming Telecommunications Regulation (2005)*

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. Proposing major revisions of the Communications Act and FCC regulations, the report 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. 47 pages, ISBN Paper: 0-89843-428-9, \$15.00

### *Challenging the Theology of Spectrum: Policy Reformation Ahead (2004)*

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 of how spectrum should be managed. That innovation allows for access to unused frequency space or time on frequencies that are otherwise licensed to an exclusive user. 43 pages, ISBN Paper: 0-89843-420-3, \$15.00

### *Spectrum and Network Policy for Next Generation Telecommunications (2004)*

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 the 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: (1) operate the NGN on a price deregulated basis and begin addressing access regulation issues, (2) secure intellectual property rights of content suppliers, and (3) adjust the system of subsidized pricing to bring about competitively neutral pricing. 92 pages, ISBN Paper: 0-89843-394-0, \$12.00

*Balancing Policy Options in a Turbulent Telecommunications Market* (2003)

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, and new business realities, might affect current regulatory regimes for the telecommunications industries. The publication includes an essay on spectrum management, "The Current Status of Spectrum Management" by Dale Hatfield. 79 pages, ISBN Paper: 0-89843-370-3, \$12.00

*Telecommunications Competition in a Consolidating Marketplace* (2002)

In the telecommunications world, what would a fully competitive environment look like? What communications initiatives should policy makers develop—considering the ultimate warfare 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. This publication also includes an essay on an innovative approach to wireless regulation, "Opening the Walled Airwave," by Eli Noam. 64 pages, ISBN Paper: 0-89843-330-4, \$12.00



*Transition to an IP Environment* (2001)

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 of universal service reform. The report also includes “Thoughts on the Implications of Technological Change for Telecommunications Policy,” by Michael L. Katz. 78 pages, ISBN Paper: 0-89843-309-6, \$12.00

*Six Degrees of Competition: Correlating Regulation with the Telecommunications Marketplace* (2000)

This report addresses the basic conceptual questions of what should be the nature of regulation in a competitive, broadband future. It also examines how fundamental policy questions 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. 65 pages, ISBN Paper: 0-89843-279-0, \$12.00

*Residential Access to Bandwidth: Exploring New Paradigms* (1999)

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

*Competition, Innovation, and Investment in Telecommunications* (1998)

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

*Implementing Universal Service After the 1996 Telecommunications Act*

This report summarizes the conference's suggestions for universal service policy options, generally, and financing options for schools and

libraries, specifically, which were submitted to the Federal-State Joint Board on Universal Service in September 1996. The report includes an appendix with sections of the Telecommunications Act of 1996 that relate to universal service. \$10.00

*The Communications Devolution: Federal, State, and Local Relations in Telecommunications Competition and Regulation* (1996)

In the context of landmark communications legislation, this report examines the forces shaping the competitive world of telecommunications, and offers federal, state, and local regulators a roadmap to resolving jurisdictional disputes and promoting effective competition. 64 pages ISBN Paper: 0-89843-190-5, \$10.00

*Strategic Alliances and Telecommunications Policy* (1995)

The report examines the underlying trends and motivations in the emergence of strategic alliances in the provision of telecommunications. It then explores the implications of these alliances, suggests tools and methods of analysis for viewing these alliances, and addresses, from a public policy perspective, what remedies and actions might be advisable in the near and long-term future. 26 pages ISBN Paper: 0-89843-170-0, \$10.00

*Local Competition: Options for Action* (1993)

This report sets forth the compromise universal service funding plan arrived at by conference participants. It also describes approaches to removing barriers to local competition and addresses issues associated with competition in other fields by incumbent carriers. It includes an essay by Eli Noam entitled, "Reforming the Financial Support System for Universal Service in Telecommunications." 38 pages ISBN Paper: 0-89843-150-6, \$10.00

*Competition at the Local Loop: Policies and Implications* (1993)

This report examines the trend toward greater competition in telecommunications, with new competitors such as cellular telephone, paging, cable television, private telecommunications providers, personal communications service experiments, satellites, and long-distance providers. It seeks to develop sound options for future public policies and addresses issues of universal service and jurisdictional control and preemption. 28 pages ISBN Paper: 0-89843-130-1, \$10.00

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## About the Communications and Society Program

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The Communications and Society Program is a global forum for leveraging the power of leaders and experts from business, government, and the nonprofit sector in the communications and information fields for the benefit of society. Its roundtable forums and other projects aim to improve democratic societies and diverse organizations through innovative, multidisciplinary, values-based policymaking. They promote constructive inquiry and dialogue and the development and dissemination of new models and options for informed and wise policy decisions.

In particular, the Program provides an active venue for global leaders and experts from a variety of disciplines and backgrounds to exchange and gain new knowledge and insights on the societal impact of advances in digital technology and network communications. The Program also creates a multidisciplinary space in the communications policymaking world where veteran and emerging decision makers can explore new concepts, find personal growth and insight, and develop new networks for the betterment of the policymaking process and society.

The Program's projects fall into one or more of three categories: communications and media policy, communications technology and the democratic process, and information technology and social change. Ongoing activities of the Communications and Society Program include annual roundtables on journalism and society, international journalism, telecommunications policy, Internet policy, information technology, and diversity and the media. The Program also convenes the Aspen Institute Forum on Communications and Society, in which chief executive officers of business, government, and the nonprofit sector examine issues relating to the changing media and technology environment.

Conference reports and other materials are distributed to key policymakers and opinion leaders within the United States and around the world. They also are available to the public at large through the World Wide Web.

