

FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)	
)	
A National Broadband Plan)	GN Docket No. 09-51
For Our Future)	

REPLY COMMENTS

W. Kenneth Ferree, President of the Progress & Freedom Foundation, hereby files these reply comments in the above-referenced proceeding.¹

I. “Come, Come Thou Bleak December Wind.”²

Like the changing of the seasons, it was inevitable that advocates of massive government intervention in the broadband markets would blow cold and raw in their initial comments. The FCC has been told that: 1) broadband markets are not competitive; 2) America lags the developed world in broadband deployment; 3) the Commission’s “light touch” regulatory approach to broadband services has failed; and 4) a complete government overhaul of the broadband marketplace is the only hope for our broadband future. Fortunately, the sky is not falling and reports of our national broadband demise have been greatly exaggerated.

¹ The views expressed here are his own, and are not necessarily the views of the PFF board, fellows or staff. By order of the Acting Chief of the Wireline Competition Bureau, the date for filing of Reply Comments in this proceeding was extended from July 7, 2009, to July 21, 2009. *Order*, GN Docket 09-51 (rel. June 25, 2009).

² *The Poetical works of Samuel Taylor Coleridge*, Poetic Fragment #3 (Macmillan, 1893). The fragment apparently was dated at Pisa in 1806 (Notebook 15). The fragment consists of four lines: “Come, come thou bleak December wind,/ And blow the dry leaves from the tree!/ Flash, like a Love-thought, thro' me, Death/ And take a Life that wearies me. The fragment echoes lines from a traditional ballad, *Waly Waly*, collected in Thomas Percy, *Reliques of Ancient English Poetry* (1765): "Marti' mas wind when wilt thou blaw,/And shake the green leaves off the tree?/O gentle death, when wilt thou cum?/For of my life I am wearie."

A. “‘To the Clean Are All Things Clean’— Thus say the People. I, However, Say Unto You: To the Swine All Things Become Swinish!”³

Unsurprisingly, the usual advocates of heavy-handed regulation attempted in their comments to lay a foundation for increased market meddling. Their premise is that the broadband markets are monopolistic or, at best, duopolistic, and that private enterprises are extracting uncompetitive rents from unsophisticated and put-upon consumers.⁴ In truth, the dire picture they paint is both factually and theoretically flawed.

First, as a factual matter, there is a great deal more actual and incipient competition than these parties would care to admit. The Commission, though, does not have the luxury of blinking reality. Based on the Commission’s own previous broadband report, more than 90 percent of the ZIP codes in the U.S. already are served by 3 or more broadband providers, and two-thirds of this nation’s ZIP Codes are served by six or more broadband providers.⁵ The two dominant technologies for the provision of broadband Internet access service, cable modem and wireline digital subscriber line and fiber, are available to over 90 percent of the U.S. population.⁶ There are few services requiring the scale of network investment necessary to provide broadband – even among those that are

³ Friedrich Nietzsche, *Also Sprach Zarathustra* (Thomas Common, trans., Dover Thrift Editions 1999) Pt. III, Ch. 14 (1883-1885).

⁴ See, e.g., Comments of Consumer Federation of America/Consumers Union (“CFA/CU”) at 5; Comments of National Association of Telecommunications Officers and Advisors (“NATOA”) at 18; Comments of Free Press at 40-45; Comments of Public Knowledge at 23.

⁵ Federal Communications Commission, Wireline Competition Bureau, Industry Analysis and Technology Division, *High-Speed Services for Internet Access: Status as of December 31, 2007*, Jan. 2009 (“*Broadband Competition Report*”), Table 16.

⁶ As of March 2009, high speed cable modem service is available to 92% of US households. National Cable & Telecommunications Association, Availability, available at <http://www.ncta.com/StatsGroup/Availability.aspx>. The FCC reports that as of December 31, 2007, DSL service is available to 82% of households to whom incumbent LECs could provide phone service. *Broadband Competition Report*, *supra* note 5 at 3. The same report states that 91% of zip codes report at least one provider of either ADSL or cable modem service. *Id.* at 4 fn. 10.

quite mature – that can match that level of choice and diversity in local markets.

Moreover, all indications are that competition among providers will continue to expand rapidly as the footprint of new 3G and 4G wireless services grows and the quality of satellite broadband service improves.

When confronted with actual facts, the advocates of heavy-handed regulation are forced to retreat to rhetoric. Those who would dismiss marketplace realities argue, in essence, that most third and fourth pipe alternatives are not perfect substitutes for landline broadband service.⁷ Even if true, the argument misses the point. Competitive products and services need not be perfect substitutes to constrain market behavior. As Dr. Jeffrey Eisenach explained at a recent panel discussion hosted by the Progress & Freedom Foundation:

The question, in other words, is not whether [an alternative] is a substitute for everyone, but rather whether it is a substitute for enough people that if [the primary service] were to attempt to raise its prices above competitive levels, more people would switch to [the alternative] than otherwise . . . and therefore . . . do away with [or] deteriorate the excess profits that the [primary service] would have otherwise made from this price increase if there were no substitutes.⁸

That is, as long as some significant segment of consumers would consider one product or service to be a viable substitute for an alternative, anticompetitive pricing or behavior is constrained.

⁷ See, e.g., Comments of Free Press at 41.

⁸ Remarks of Dr. Jeffrey Eisenach, Moderated Panel Discussion, “Broadband Competition: Is the Glass Half Empty or Half Full,” at 21 (“PFF Broadband Competition Event”), <http://www.pff.org/events/pastevents/061209-broadband-competition-glass-half.asp>. A stenographic transcript of the event is available at <http://www.pff.org/issues-pubs/pops/2009/pop16.16-broadband-competition-glass-half-transcript.pdf>. For convenience, a copy of the stenographic transcript of the PFF Broadband Competition Event is attached hereto as Exhibit A; citations to remarks made during the event in this Reply Comment will reference the corresponding page of Exhibit A.

And, as a factual matter, all evidence suggests that, in the case of broadband markets, people *do* seek variety and they *do* use different platforms and services to satisfy different market demands. If anything, the broadband market is not behaving like a market in failure, but rather one that is characterized by rapid development, frequent service improvements, and widespread consumer satisfaction.⁹ As Free Press itself had to concede, broadband services are being adopted by American consumers faster than any other new technology has – ever.¹⁰

More fundamentally, the arguments focused on the number of broadband providers in any local market reveal a misunderstanding of market economics in networked industries. For example, referencing testimony by Mark Cooper, Free Press claims that a “central premise in competition analysis is summed up by the quip ‘four is few, six is many.’ In other words, when a market has fewer than the equivalent of six equal-sized competitors, the market just doesn’t function properly.”¹¹

With all due respect to the Consumer Federation of America’s Mark Cooper, he is not an economist and his suggestion that six is the magic “right” number—or perhaps the magic minimum number – of competitors necessary for a competitive broadband market

⁹ See John Horrigan, Pew Internet and American Life Project, *Home Broadband Adoption 2009*, June 2009, available at <http://www.pewinternet.org/~media/Files/Reports/2009/Home-Broadband-Adoption-2009.pdf> (people are more than twice as likely to cancel or cut back on cable TV or cell phone service to save money than they are to cancel or cut back on Internet service).

¹⁰ Comments of Free Press at 130 (“At the turn of the century, broadband was present in about 2 percent of American homes. Today, that figure stands at nearly 60 percent. No other technology even comes close to competing with this pace of adoption -- not the telephone, television, the automobile, cable TV, cell phone, or even the computer itself.”).

¹¹ Comments of Free Press at 40, quoting testimony of Mark Cooper of the Consumer Federation of America, before the U.S. Senate Committee on Commerce, Science and Transportation, Regarding Competition and Convergence (Mar. 30, 2006); *see also* Comments of CFA/CU at 31 (nothing in real-world experience or economic theory suggests that two competitors is enough).

simply is unsupportable. As Dr. Larry F. Darby (who, in fact, is an economist) observed at the PFF Broadband Competition Event, it is a misconception that six or more competitors of roughly equal size are needed for a successful market.¹² To the contrary, there are countless well-known duopoly markets that thrive without government intervention and without noticeable consumer harms.¹³ That's not to say that every duopoly is benign, but even a duopoly market is not in and of itself to be condemned as a failed market without further analysis of actual market performance.

What might such analysis include? One fact that might suggest a failed market, according to Dr. Darby, would be excessive returns by market participants. But financial performance evidence indicates that the supposed broadband duopolists are making no excessive profits. To the contrary, Dr. Darby's research found that profit margins for some of the nation's largest broadband network providers are consistent with those of other Standard & Poor's 500 companies and, in fact, returns for shareholders in these companies are somewhat below the average returns for the S&P 500.¹⁴

Dr. Robert Atkinson, another PFF Broadband Competition Event panelist, has reached similar conclusions.¹⁵ As Dr. Atkinson has explained, when the vast majority of the costs associated with delivering a service are fixed, as they are in most any networked industry, there is a tradeoff between increased competition and other public policy goals.

¹² Remarks of Dr. Larry Darby, Exhibit A at 10 ("Well, the implication of that statement [that six competitors are needed] is that the entire U.S. economy or 99 percent of it, outside the production of wheat and oats and soybeans, is unworkable. It's nonsense.").

¹³ *Id.* at 12 (citing, for example, Kodak and Fujifilm in motion picture film stock, Pepsi and Coca Cola in soft drinks, and Home Depot and Lowe's in retail home improvement).

¹⁴ *Id.* at 45-47.

¹⁵ See Robert Atkinson, "The Role of Competition in a National Broadband Policy," *Journal On Telecommunications & High Technology Law*, Vol. 7 (Mar. 16, 2009), available at <http://www.itif.org/files/JTHTL.pdf>.

That is, the addition of competitors may result in ruinous price competition, impair investment, inhibit innovation, and decrease efficiency.¹⁶ Indeed, Dr. Atkinson has suggested that six competitors in the broadband markets may in fact be much worse than two.¹⁷

In the end, as Dr. Atkinson's work suggests, it likely would be socially inefficient and non-optimal to continue building redundant landline broadband networks. Consequently, the notion that public networks should overbuild private networks in order to create additional competition is completely off the mark; it would be, as Dr. Atkinson explains, "a huge waste of money."¹⁸ But where there is opportunity (and absent governmental restrictions) the private markets will provide alternative substitute platforms.¹⁹ As we are learning with increasing speed, non-landline broadband platforms have unique characteristics (*e.g.*, wireless mobility or the ability to reach far flung rural areas in the case of satellite services) that offer consumers additional choices and greater flexibility for certain uses or in certain locations. Thus, while a "duopoly," as it were, in landline broadband might be economically optimal, in fact the market is providing

¹⁶ See Remarks of Robert D. Atkinson, Exhibit A at 15 ("the Washington consensus that basically says more competitors in this space is better is just fundamentally wrong"); *see also* Atkinson, *supra* note 15 at 1-2 ("[A]lmost everyone involved in broadband policy in Washington, D.C., agrees that regardless of the current state of competition, more competition is better. ... [It] is a mistake for policymakers to assume that if they simply 'push the competition lever,' all the problems with broadband policy will be solved.").

¹⁷ Remarks of Dr. Robert D. Atkinson, Exhibit A at 15.

¹⁸ Remarks of Dr. Robert D. Atkinson, Exhibit A at 16.

¹⁹ Indeed, another PFF Broadband Competition Event panelist, Dr. George S. Ford, has suggested in his published writings that because "communications markets will be – by their very nature – concentrated, policymakers should do what they can to make all communications markets more conducive to facilities based entry," and, rather than focus on "how many firms' are present in a market, policymakers should appropriately focus on 'what policies will facilitate entry' by firms to provide all parts of a "bundle' of voice, video and data services." *See* George S. Ford, PhD, Thomas M. Koutsky, Esq., Lawrence J. Spiwak, Esq., "Competition After Unbundling: Entry, Industry Structure and Governance," Phoenix Center Policy Paper No. 21, (June 2005), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=777424.

consumers with new platforms, more choices, and new services at an unparalleled pace. To discover a failed market here requires willful self-deception.

B. “There are Three Kinds of Lies: Lies, Damned Lies, and Statistics.”²⁰

A second misconception laced throughout the comments of those who would have the Commission dramatically, and catastrophically, re-regulate broadband Internet access is that the United States is a laggard in some kind of information-technology steeplechase.²¹ And of course they have statistics to bolster their claims.²² Their statistics, though, are more than a little misleading.

As Dr. Eisenach and others have noted, the statistics most frequently cited in support of claims that the U.S. is “slip[ping] behind the rest of the world”²³ tend to: be biased in favor of countries where families are small (U.S. households are relatively large by international standards); not uniformly include commercial connections (many U.S. broadband users may opt not to pay for private service because they have ready access at their place of employment); and be based on factors (*e.g.*, the number of people with

²⁰ The quip was popularized by Mark Twain and it appears in his posthumously published *Autobiography* (1924), but he attributed it to 19th Century British Prime Minister Benjamin Disraeli. In fact, there appears to be no record of Disraeli ever having written or otherwise expressing this sentiment, and its precise origins remain a mystery.

²¹ *See, e.g.*, Comments of Free Press at 32 (“America has fallen further and further behind the rest of the world in every index of information and communications technology.”); Comments of CFA/CU at 1 (“the U.S. has fallen behind more than a dozen advanced industrial nations on broadband penetration, speed and price”).

²² *See, e.g.*, Comments of Free Press at 18-19, 33, fn. 29, etc; Comments of CFA/CU at i, Appendix A at 27.

²³ Comments of Free Press at 305.

landline telephone connections) that have little or nothing to do with broadband services.²⁴ Apples-to-oranges comparisons are a poor basis for policy-making.

Those who rely on OECD or similar statistics to demonstrate that the U.S. is losing the broadband race also mistakenly assume a causal connection between broadband policy and broadband adoption. As others have noted in the past, it just might be that, for personal or cultural reasons, Americans more often than some others simply elect not to bring broadband service into their homes.²⁵ Indeed, in the most recent Pew Internet Project study on Home Broadband Adoption, the authors found that, among those who do not have broadband service at home, 50 percent say they simply are uninterested.²⁶ As hard as it is for some in Washington to believe, there may be a large swath of middle-America that would rather sit on the front porch sip lemonade, and chat with their neighbors than update their profiles on Facebook.

²⁴ Remarks of Dr. Jeffrey Eisenach, Exhibit A at 5. *See also* Jeffrey Eisenach, "Broadband Policy: Does the U.S. Have It Right After All?" Progress on Point 15.14, The Progress & Freedom Foundation, September 2008, available at <http://www.pff.org/issues-pubs/pops/2008/pop15.14USbroadbandpolicy.pdf>; Scott Wallsten, "Understanding International Broadband Comparisons," Technology Policy Institute, June 2009, at 1, 3-4, 16-19 available at <http://www.techpolicyinstitute.org/files/international%20broadband%20comparisons%202009%20update%20final.pdf> (household broadband adoption continues to increase quickly in all OECD countries; measured in terms of broadband *household* penetration, the U.S. ranks somewhere between 8th and 10th among OECD countries; the U.S. remains at or near the top of many ICT indicators including the latest estimates of IT investment).

²⁵ Remarks of George S. Ford, Exhibit At at 29 ("the purpose of broadband is not to run up subscription counts . . . [i]f you are spending thousands and thousands of dollars to convince somebody to buy the service, the marginal contribution of that to society's welfare is trivial if not negative").

²⁶ Horrigan, *supra* note 9.

C. “That Government is Best Which Governs Least.”²⁷

When Henry David Thoreau wrote those words, he did so recognizing that “[g]overnment is at best but an expedient; but most governments are usually, and all governments are sometimes, inexpedient.”²⁸ That is, government imposition on private and free human conduct can be justified only where it is necessary; where it is unnecessary, government will more often bind free markets, free speech, and free minds.

The proponents of a broadband market dominated by government interests would like to pretend that freedom is a negative – it is the absence of something, the want of regulation and government oversight. Hence, the Commission’s “light touch” regulatory approach over the last decade is characterized by these same parties as a dereliction of duty, a failure to adopt a positive policy, a reliance on quasi-mystical invisible forces.²⁹

To the contrary, as we made clear in our initial comments, “the FCC’s decisions to refrain from imposing and/or removing ‘economic’ regulation from the provision of broadband Internet access services was not the absence of conscious policy, but rather was itself a deliberate strategy to enhance network upgrades and broadband deployment

²⁷ Henry David Thoreau, *Civil Disobedience*, in *Walden and Other Writings* 635 (B. Atkinson ed., Modern Library 1950) (1849). The quote is sometimes attributed to Thomas Jefferson, though there is no source in his writings to substantiate the attribution. It does appear, however, that the editor of the *United States Magazine and Democratic Review* used a substantially similar phrase as early as 1837. See Suzy Platt, ed., *Respectfully Quoted: A Dictionary of Quotations Requested from the Congressional Research Service* (Library of Congress 1989).

²⁸ Thoreau, *Civil Disobedience*, in *Walden and Other Writings*, at 635.

²⁹ See, e.g., Comments of Free Press at 246 (“America’s broadband failures are the result of policy failures Over the past decade, while other countries developed and properly implemented national broadband policies, America’s policy was just to cross our fingers and hope for the best. . . . These hopes were based on the belief that the invisible hand would work its magic if the agency got out of the way.”); Comments of NATOA at 17; Comments of Public Knowledge at 23.

through regulatory restraint.”³⁰ It is axiomatic that, if the government wants more of something, it should remove impediments to investment in that which it desires. Thus, the stated goal of the “light touch” approach was to create incentives for investment in broadband networks.

Contrary to the suggestions of some, the “light touch” regulatory approach has been quite successful. As we noted in our comments, the major broadband providers in this country have invested tens of billions of dollars in their networks, and they continue to replace and upgrade these networks at an enormous cost each and every year.³¹ These investments translate into new service offerings for millions of American consumers in one of the most dynamic technology revolutions the world has ever seen.³²

D. “The Decline of Rome was the Natural and Inevitable Effect of Immoderate Greatness.”³³

As Gibbon so perspicaciously observed more than two hundred years ago, the problem with Rome was Rome itself. Too much political intrusion, too much

³⁰ Comments of W. Kenneth Ferree, President, and Barbara Esbin, Senior Fellow and Director of the Center for Communications and Competition Policy at The Progress & Freedom Foundation at 17 (citing *Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities*, 20 FCC Rcd 14853, 14899 (Aug. 5, 2005)).

³¹ *Id.* at 17 (citing Wall Street Journal, *Spending Wave Buys Makers of Network Gear*, Business section (Feb. 14, 2007); Doreen Toben, *Address at the Raymond James 30th Annual Institutional Investors Conference* (Mar. 9, 2009)).

³² Comments of W. Kenneth Ferree, President, and Barbara Esbin, Senior Fellow and Director of the Center for Communications and Competition Policy at The Progress & Freedom Foundation at 22 (“Not quite four years have passed since the regulatory status of cable and wireline *broadband* Internet access was settled and the FCC established a relatively de-regulatory approach to service provisioning. We are just beginning to see the results of this U.S. experiment with de-regulation and so far they are very encouraging.”).

³³ Edward Gibbon, *The Decline and Fall of the Roman Empire* 327 (Hugh Trevor-Roper ed., Phoenix Paperbacks 1970) (1788). The passage concludes: “The causes of destruction multiplied with the extent of conquest; and as soon as time or accident had removed the artificial supports, the stupendous fabric yielded to the pressure of its own weight. The story of its ruin is simple and obvious; and instead of inquiring *why* the Roman empire was destroyed, we should rather be surprised that it had subsisted so long.”

“government” and the immoderate imposition of state where it is unneeded, un-called for, and unwanted, tramples private enterprise and ingenuity, and ultimately calls the legitimacy of the state’s actions into question. Despite suggestions to the contrary in some of the comments,³⁴ unwarranted government intervention in the broadband markets will succeed only in discouraging investment, throttling innovation, and hobbling competition.

Free markets operate on fairly simple principles. Investment and innovation follow opportunity. To the extent that government bureaucracies increase investment risk, delay the realization of potential returns, or limit opportunities for return, investment and its step-sister, innovation, are discouraged. Thus, it is no surprise that regulatory requirements that are not driven by market demands, *e.g.*, open-access requirements, build-out mandates, or minimum service standards, will tend to discourage investment and slow or deter the expansion of broadband networks.³⁵

On the other hand, as we pointed out in our comments and with few exceptions, “the markets have performed remarkably well at determining the level of capacity that can be sustained in any given area, the types of services that consumers want and

³⁴ See, *e.g.*, Comments of CFA/CU at 2 (“To preserve this essential characteristic the Commission must reject all efforts by network operators to impede the flow of data with private practices such as, but not limited to filtering, deep packet inspection, throttling, blocking, or other forms of degradation.”); Comments of NATOA at 40 (facilities-based competition not enough); Comments of the Media Access Project (competition is inadequate, more regulation is needed).

³⁵ See Remarks of Dr. Thomas Hazlett, Exhibit A at 9 (“there’s actually a very positive correlation between subscribership and deregulation, and a negative correlation the other way around”). See also Thomas W. Hazlett & Anil Caliskan, “*Natural Experiments in U.S. Broadband Regulation*,” *Review of Network Economics*,” Vol. 7, No. 4 (Dec. 2008), available at <http://iep.gmu.edu/documents/RNE.TH.AC.FINAL.12.1.08.X.doc> (policymakers contemplating the optimal economic structure for broadband networks should take cognizance of the empirical evidence demonstrating that DSL subscription rates grew significantly once unbundling mandates were lifted).

demand, the level of service appropriate for various user demographics (e.g., business versus residential users), and the price points at which service can be provided at a sustainable level.”³⁶ In fact, we “have achieved nearly ubiquitous broadband deployment in little over a decade in large part through reliance upon market forces and facilities-based competition, aided by a ‘light touch’ regulatory framework that put a premium on infrastructure investment.”³⁷ “It is hard to imagine a government-directed program meeting or beating this impressive roll-out.”³⁸

This is not the time to bring the heavy boot of bureaucracy down on these thriving new markets. Rather, now is the time for regulatory discretion and moderation. We are not before the Commission to suggest that there are simple answers or that regulatory intervention never is needed or appropriate; but rather to suggest that those tools should be brought to bear only as necessary and when the costs associated with regulatory intervention clearly are over-balanced by the benefits to be gained. Making that judgment requires thoughtful analysis, not knee-jerk resort to shibboleths like “open-access” or “net neutrality,” and any policies adopted should be finely tuned to marketplace realities rather than bluntly applied as categorical imperatives.

³⁶ Comments of W. Kenneth Ferree, President, and Barbara Esbin, Senior Fellow and Director of the Center for Communications and Competition Policy at The Progress & Freedom Foundation at 10.

³⁷ *Id.* at 16.

³⁸ *Id.*

II. **“We are Continually Faced by Great Opportunities Brilliantly Disguised as Insoluble Problems.”³⁹**

As suggested above, the broadband market is not, in fact, a monolith, but a collection of different markets in which consumers with a wide range of needs find a variety of services using a number of different platforms. The broadband marketplace is as varied and dynamic as the people who use it. As a result, technological and business innovations occur in this space at a rate not suitable for broad or blunt regulation.

The Commission should, consequently, be wary of comments that suggest simple answers or that advocate policies based on high-level abstractions. Any regulatory action in this area should be careful, moderate, and precisely targeted. Several parties to this proceeding have filed comments that should prove helpful in this regard. Most importantly, the more thoughtful comments in this proceeding make it clear that the government should: 1) focus on demand-side issues; 2) work to establish broadband “anchor” institutions in unserved communities; and 3) stimulate private sector investment in new broadband networks.

A. **“This is the Meal Equally Set.”⁴⁰**

Competition among broadband providers and services has brought enormous diversity and choice to consumers, but impediments to adoption on the demand side of the equation continue to place a drag on efforts to achieve broadband ubiquity. Several parties, therefore, urge the government to focus its efforts on educating Americans about

³⁹ Often attributed to Lee Iacocca, the line appears first to have been uttered by John W. Gardner, U.S. Secretary of Health, Education and Welfare (1965-1968).

⁴⁰ Walt Whitman, *Song of Myself*, in *Complete Poetry and Selected Prose* 37 (James E. Miller, Jr. ed., Houghton Mifflin 1959): “This is the meal equally set, this the meat for natural hunger,/ It is for the wicked just the same as the righteous, I make appointments with all,/ I will not have a single person slighted or left away. . . .”

digital technology, increasing demand through enhanced delivery of government services online, and subsidizing end-user equipment and broadband access where income is a barrier to adoption.⁴¹ We agree with each of these policy recommendations.

First, although it is easy to assume that Americans in general – and certainly those of among the younger generations – now have a certain basic understanding of computers and communications technologies, in fact there remains a great educational divide between those who use digital technologies regularly, either for business or pleasure, and those who do not. Indeed, as the Pew Internet Project has found, many of those who do not subscribe to broadband services – much of the broadband gap – have not affirmatively rejected advanced services, they simply do not understand the power or relevance that these tools can have in their lives.⁴² Government action, therefore, to increase computer and Internet literacy could have a significant positive impact on broadband adoption.⁴³

On the other hand, as noted above, even some Americans who are technically literate elect not to become broadband subscribers because the value of having high-speed service is not immediate or apparent. Government agencies can help to remedy

⁴¹ See, e.g., Comments of Verizon at 32-34; Comments of Comcast at 18; Comments of AT&T at 41-51.

⁴² John B. Horrigan, “Why it will Be Hard to Close the Broadband Divide,” 3, available at http://www.pewinternet.org/~media/Files/Reports/2007/Broadband_Commentary.pdf (“The usability and relevance of the internet are additional speed bumps for dial-up users. Approximately one-quarter of American adults frequently need help from others to get information and communication technology (ICT) to work. Fully 43% of adult Americans say ICTs have not improved their personal productivity. ... The vast majority of these Americans are dial-up internet users, and their indifferent posture toward ICTs may make them reluctant to incur the costs of upgrading to broadband at home.”).

⁴³ E.g., Comments of Comcast at 68; see also, e.g., Comments of AT&T at 45-46 (DOE should work with schools to add computer and internet literacy to national education curriculum); Comments of Verizon at 32-34 (computer literacy programs should be developed and operated by young volunteers, AmeriCorps, high school students, and others seeking service opportunities).

that perception by making many of their services available online.⁴⁴ To the extent broadband services enable people to interact with federal, state, and local agencies without physically visiting an office or other facility, the savings and convenience to be realized from access to broadband can be made real and tangible to large sections of the American public.⁴⁵

Finally, there are segments of the population of non-broadband users who would subscribe, but who cannot for financial reasons. Here the government can have a profound impact. As AT&T noted in its comments, there are countless direct-assist programs that can help bridge the digital divide within a very short timeframe. For example, broadband services can be provided at community centers in low-income neighborhoods, equipment subsidies might be provided to those in need, and the Lifeline and Link-Up programs can be extended to include broadband access services.⁴⁶ Others had similar suggestions.⁴⁷ Whatever the precise mechanism, the government can have a much greater impact on broadband adoption by targeting specific assistance programs to those most in need than it can by trying to shape the entire marketplace through broad prescriptive rules or non-market driven mandates.

⁴⁴ *See, e.g.*, Comments of Comcast at 68.

⁴⁵ Similarly, as Verizon noted in its Comments, more sophisticated network management practices that protect the security of networks will help people feel more secure about using the Internet and thereby facilitate adoption. Comments of Verizon at 53.

⁴⁶ Comments of AT&T at 48-51; *see also* Comments of the Cellular Telecommunications Industry Association at 40 (subscription discounts should be available through Lifeline and Link-Up programs).

⁴⁷ *See, e.g.*, Comments of Microsoft at 7 (advocating direct funding to poorer communities for broadband service); Comments of Verizon at 32-33 (supporting tax credits to help lower income individuals and other programs that make equipment available to those who are not able to afford computers such as “No Child Left Offline” and “Computers 4 Kids”).

B. “The Buddha . . . Resides Quite as Comfortably in the Circuits of a Digital Computer . . . as He does at the Top of a Mountain or in the Petals of a Flower.”⁴⁸

A number of parties have noted that, in rural areas where demand may be high, but broadband adoption rates are low, one means of driving service deep into the communities is to initiate broadband service at “anchor” institutions.⁴⁹ Again, we agree.

As we said in our comments on the National Telecommunications & Information Administration’s use of broadband stimulus funds, government intervention on the supply-side should be “timely, targeted, and temporary.”⁵⁰ Helping to bring services into otherwise unserved communities through the initiation of service at “anchor” institutions such as schools, libraries, community centers, and hospitals, satisfies that standard. Funding services at key public institutions can be done quickly, the immediate beneficiaries of any such program within unserved communities can be readily identified, and the investment required to achieve penetration in these communities does not run into the indefinite future.

Moreover, once service beachheads are established, the market can be expected to extend service throughout the community. As Microsoft explains in its comments, service to anchor institutions can be leveraged to facilitate delivery of last-mile service in communities where construction of a stand-alone system might not otherwise be

⁴⁸ Robert Pirsig, *Zen and the Art of Motorcycle Maintenance*, 16 (Bantam Books 1974).

⁴⁹ See, e.g., Comments of Microsoft at 2-6; Comments of Comcast at 47; Comments of AT&T at 60.

⁵⁰ Comments of W. Kenneth Ferree, President, and Barbara Esbin, Senior Fellow and Director of the Center for Communications and Competition Policy at The Progress & Freedom Foundation, *Joint Request for Comments on Implementing the American Recovery and Reinvestment Act of 2009*, NTIA Docket No. 090309298-9299-01, GN Docket No. 09-40 (filed Apr. 10, 2009) at 5-8.

economically viable.⁵¹ For a relatively small investment, the initiation of service at anchor institutions promises to have a large impact on broadband build-out nationwide.

C. “It Is Not from the Benevolence of the Butcher, the Brewer, or the Baker, that We Expect Our Dinner, But from Their Regard to Their Own Interest.”⁵²

Perhaps most importantly, competition between platforms has spurred both additional infrastructure investment and service choice for consumers; it will continue to do so only so long as the policy framework provides a welcoming and stable environment for investment. Numerous parties concur.

AT&T suggests, for example, that government policies should minimize regulatory burdens and investment uncertainty, provide incentives for innovation and investment, and eliminate inequitable, unfair, and unnecessary taxes on communications services.⁵³ Similarly, Comcast urges that government policy focus on the elimination of deployment barriers (*e.g.*, restrictions on the use of public rights-of-way) and the provision of tax and other incentives for build-out in unserved areas.⁵⁴

Verizon points out that tax reform could have a substantial positive impact on broadband build-out and adoption. For example, allowing network operators to expense or accelerate depreciation of broadband network investment would significantly lower the cost of deploying networks, thereby encouraging build-out in rural and other areas where

⁵¹ Comments of Microsoft at 6.

⁵² Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, 14 (ed. Edwin Cannan, Random House 1937) (1776).

⁵³ *See, e. g.*, Comments of AT&T at 82-97.

⁵⁴ Comments of Comcast at 49-51; *see also* Comments of the Cellular Telecommunications Industry Association at 17-20 (government should reduce or eliminate impediments on the installation of facilities for wireless services).

it currently is not economically viable.⁵⁵ An allowance for broadband investment tax credits could have similar effects.⁵⁶ On the demand side, Verizon suggests that a fully refundable broadband tax credit for those who qualify for the earned income tax credit could help to overcome income barriers that contribute to the digital divide and thereby greatly stimulate demand.⁵⁷ Additionally, Verizon suggests that a refundable tax credit program to help those with lower incomes purchase computers, as well as assist them in the installation and set-up of the computers, would advance the twin goals of universal broadband access and utilization.⁵⁸

All are worthwhile suggestions and, most importantly, the principle of promoting private investment should be the lodestar for the Commission as it prepares its report in this proceeding. To the extent that demand-side problems have been addressed, if access or availability remains an issue in certain areas or communities, government policy should be focused on creating incentives for private investment in those communities rather than on the promulgation of broad rules of general application or the development of public networks. As Dr. Darby concluded at the PFF Broadband Competition Event: “at the end of the day, no national broadband policy makes any sense if it does not cultivate an enormous amount of capital formation out of the private sector.”⁵⁹

CONCLUSION

As virtually all parties to this proceeding have recognized, the broadband markets are too important to the future of this country, and too much is at stake, for the rash

⁵⁵ Comments of Verizon at 127.

⁵⁶ *Id.* at 128.

⁵⁷ *Id.* at 129.

⁵⁸ *Id.* at 33.

⁵⁹ Remarks of Dr. Larry Darby, Exhibit A at 24.

action. The Commission should, proceed with careful deliberation and judicious discretion. Some of the comments filed here helpful in this regard. Others, unfortunately, are premised only on vacuous slogans or bad economics. The Commission should have no difficulty differentiating between the two.

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Exhibit A

Broadband Competition: Is the Glass Half Empty or Half Full?*

Moderated Panel Discussion

Barbara Esbin, Moderator
Robert D. Atkinson
Larry F. Darby
Jeffrey A. Eisenach
George Ford
Thomas Hazlett**

I. Introductions

Ken Ferree, President, The Progress & Freedom Foundation: All right, folks. We're going to go ahead and get started. We have a lot of material to cover today. Thank you for coming to this event on Broadband Competition: Is the Glass Half Empty or Half Full? I'm Ken Ferree from the Progress & Freedom Foundation. And I guess in some sense, I'm your ultimate host for today's festivities.

When I was thinking about this event, I kept thinking of something that I heard somebody said sometime, somewhere. I have no idea who it was, so I can't give proper attribution, but the saying was "In the end, we're all captives of reality." I'm hoping that really what this event will be about today is reality.

So much of what I hear, at least in the realm of broadband policy, tends to be sort of fanciful and fantastic and based on philosophies, ideologies and beliefs. And today for at least the next hour and a half, I would ask you to suspend belief and delve into the world of reality with us.

Your host for this little trip will be Barbara Esbin, Senior Fellow at the Progress & Freedom Foundation and our Director of our Center for Communications and Competition Policy.

With that, I will turn it over to Barbara.

* This is an edited transcript of a PFF Congressional Seminar that took place on June 12, 2009 in Washington, DC. The edited transcript has not been reviewed by the program participants.

** Speaker biographies are available at the end of this transcript.

Barbara Esbin, Senior Fellow and Director, Center for Communications and Competition Policy, The Progress & Freedom Foundation: And I too want to thank you all for coming today; we're very pleased to see this turnout. It's such a beautiful day and we're so far underground. I appreciate your coming down here and your ability to find this room.

In keeping with the rejoinder cherished by economists – “There Ain't No Such Thing As A Free Lunch” - we have provided no free cookies with your lunch. I hope you don't mind. And now we'll turn to the substantive portion of our program.

Former New York City Mayor Ed Koch was famous for asking his constituents, “So, how am I doing?” The question how are we as a nation doing on broadband competition is an important one. It lies at the heart of many key policy debates today, including how best to dispense stimulus funding, how to structure a national broadband policy, and what regulatory framework best fits today's communications marketplace.

I have invited this very distinguished group of economists here today to share with you the results of their recent studies on how America is doing on broadband competition. Before we begin, I just want to let you know that NextGenWeb.org is videotaping this event and will post the video on their website¹.

I'm going to give only very brief introductions so that we can move directly to the presentations. More extensive biographies of each panelist are included in the written materials. In the interest of efficiency, I note that each panelist holds a Ph.D., and that each has been affiliated with one or more Washington-based think tanks over the course of his career.

With that, I'm very pleased to present Robert Atkinson. Rob is president of the Information Technology and Innovation Foundation, a Washington, D.C.-based technology policy think tank. Dr. Atkinson is one of the most prolific authors of research reports on technology and innovation policy, and hosted informative and thought-provoking panel discussions in this town. As a member of the friendly competition, I am in awe of his energies and abilities.

Next to him is Larry Darby. Larry is principal of Darby Associates and senior fellow at the American Consumer Institute. Dr. Darby has held a variety of academic, government and industry positions in the telecommunications and finance fields, including service at the Federal Communications Commission as chief economist, chief of the Common Carrier Bureau, as well as senior economist in the White House Office of Telecommunications Policy. Dr. Darby currently teaches about regulation and telecommunications and financial markets as adjunct professor at the George Mason University Law School.

Next to him is Jeffrey Eisenach. Jeff is chairman and managing partner at Empiris, LLC, a Washington, D.C.-based economic consulting firm, and also adjunct professor at the George Mason University Law School. Dr. Eisenach's practice focuses on economic analysis of anti-trust, regulatory and consumer protection issues. He is the author of numerous research

¹ <http://www.nextgenweb.org/news-and-blog-clips/competing-to-talk-about-competition>

reports and expert testimony on regulatory law and policy. And among his other affiliations, he is also a past President of The Progress & Freedom Foundation.

Next to Jeff is George Ford. George is chief economist and co-founder of the Phoenix Center for Advance Legal and Economic Policy Studies also in Washington, D.C. Dr. Ford has served as a professional economist at the FCC, and in the private sector for large and small telecommunications firms, and is also a prolific author of scholarly studies and expert testimony in the application of economics and econometrics to public policy issues.

Last, but not least, we have Thomas Hazlett. Tom is professor of law and economics at the George Mason University Law School. Dr. Hazlett is an internationally recognized expert on telecommunications policy. He is currently a columnist for the Financial Times New Technology Policy Forum and is widely published in economic journals, law reviews and media outlets. Dr. Hazlett too is an FCC veteran serving as chief economist from 1991 to 1992.

Coincidentally, 1991 was my first year as an FCC attorney in the Common Carrier Bureau's Tariff Division. At the time I entered, the FCC was moving away from telephone carrier tariffs based on cost of service and rate of return principles, and instituting a price cap system of rate review.

When I arrived, I was informed by a Tariff Division veteran, in all earnestness, the price caps would put us out of work. And, the Tariff Division is no more having been renamed the Competitive Pricing Division.

What I don't quite understand is the need to regulate competitive prices, but I think it does illustrate the endurance of regulatory institutions.

II. Discussion

Barbara Esbin: Turning now to our panel, I have asked Dr. Eisenach to lead off the discussion with the results of his study on whether the U.S. approach to broadband policy, focusing on intermodal competition, is working and producing consumer benefit.

Jeffrey A. Eisenach, Chairman and Managing Partner, Empiris LLC: Barbara, thank you. Thank you all for being here today. I think this is an important topic. And as we move forward to get some top-level political appointees in place at the FCC and NTIA, it's about to get to be a very active topic.

I started in this environment in 1994, '95, '96, in that period, and things were kind of moving in a different direction. But one thing that we have in common with what's going on today is people are asking very fundamental questions.

For those of you who have not had a chance to do so, I'll just give you a very brief précis. If you were to read the filings that went in Monday in the Broadband Plan NOI at the Federal Communications Commission, if you were to read some of the books that have come out of places like Public Knowledge and Free Press and New America Foundation, what you would see is a going-back-to-basics reexamination from the most fundamental level of every aspect of

telecom policy for the past 15 years or so, and I think it would be hard for me to say I find very much to agree with in the conclusions coming out of those studies.

I think they're about 180 degrees diametrically as wrong as they could be. But the substance of them in terms of searching for a different set of answers and the asking fundamental of questions, I think is very healthy. I mean we're talking about going back and re-examining Computer I, Computer II, Computer III, the Wireline Broadband Order, really all of the things that got us to where we are today, and parts of the critique I think are valid. To the extent that the law did not anticipate a broadband Internet environment, where the FCC to some extent has made it up as it's gone along in an effort to craft a policy in a statutory framework which is still very much a silo-based framework, that critique, as far as it goes, is a reasonably fair one.

Again I think the kinds of outcomes that people are advocating today are pretty misdirected. With that, let me explain why.

We're getting ready, though I hope not, to perhaps make policy on the basis of two big -- I'm going to be on my best behavior and say -- misconceptions about the state of the world.

The two misconceptions are this: First of all, that the U.S. is somehow behind relative to the rest of the world in terms of the deployment of broadband and where we are and where we're going in the broadband environment, and I just think that's a hundred percent incorrect. And we can talk about that on a country-by-country basis, or a region-by-region basis, but I think that characterization is fundamentally wrong, and the statistics upon which it's based are either meaningless or incorrect.

If you look at the debate, maybe 60 or 70 percent of the rationale or more, for why we need to dramatically turn things around and do something different, is grounded in this one simple misconception that the U.S. is way behind the rest of the world.

And the second issue, which I know the panel is going to talk about also, in particular my co-professor at George Mason Dr. Darby so I wouldn't want to step on his remarks, has to do with duopoly and the state of competition in the U.S. and the notion that we have something approaching a cozy duopoly in a broadband market. That we're clearly only ever going to have two pipes, I think, is as misguided as the first premise.

Now, why is it I don't think we're behind in the world? This is like one of those cases where people believe if you repeat it often enough, it must be true.

But first of all, 80 percent of that argument is grounded in one statistic. The U.S. is fifteenth in the world when it comes to broadband subscriptions per 100 inhabitants, according to the OECD study which has been done over the course of several years.

People other than me, and Scott Wallsten in particular has done a great job, have critiqued that study. And it's not that there's anything wrong with the study in and of itself, it's just that you have to look at what it means and how, like any other statistic, the data is collected.

When you look at that study in detail, you find that there are a number of big problems. One of which is that the OECD does not do a good job separating out business connections from

residential connections. So it's pretty clear that in most other countries in which they're counting broadband connections, they're counting business connections. In the United States, they're not counting business connections. So, the U.S. is biased down.

They're also looking at comparing countries with smaller household sizes to the United States, which has a larger household size. And so when you do that on a per capita basis as opposed to a per household basis, again you're biasing the statistics down. That's one issue with that.

There are other statistics that get cited. One that I saw at an event my friend Drew Clark had on the Hill the other day, Jim Hollenberger was citing statistics from the International Telecommunications Union, the Digital Opportunity Index. And this is what the report said, what Hollenberger said: If you look at ITU's Digital Opportunity Index, it lists the U.S. as 21st right behind Estonia and tied with Slovenia. The president has looked at these rankings and called them unacceptable. That's why he's made broadband access for all a national priority.

Now, if the president has looked at those rankings, which I doubt, I hope he has looked at the ones that show the U.S. is not 21st but 13th, that Estonia and Slovenia are nowhere in the same neighborhood with the United States, and I hope he's also deconstructed them a little bit and found out that the index that we're looking at is counting things like the number of people with televisions and the number of people with land line telephone connections. So, it has very little to do with broadband.

So people I think have now gotten to the point where the statistic is true enough that you can give any version of it whether or not the facts match the statistic, and expect to be believed. So I hope people would be more careful with their statistics.

But more broadly if you look at what's going on in the U.S., what you see is innovation, and you see that competition is driving innovation. The U.S. is rapidly becoming the most fiber-prevalent country in the world. Probably won't catch up with Korea and Japan very soon, but those were done with essentially government-subsidized build-outs.

If you look at the European Union which is following the policies that most of the more liberal folks in the U.S. are advocating, you see a world where there is essentially no fiber build-out, nor any fiber build-out likely to happen any time soon except in Sweden where municipalities, again government entities, are actually building the fiber or where competitors are building the fiber as in France. You don't have incumbent companies as in the U.S., building fiber.

The U.S. is leading in DOCSIS 3 deployment with 50 and 100 megabit DOCSIS 3 capabilities being rolled out, and being rolled out essentially in the same places where the telephone companies have upgraded their network. So you see a tremendous amount of innovation going on in the U.S.

In the price comparisons that you see, same deal. Do what I did this morning. Go on the Comcast, the Cox, the Verizon and the Virgin Media websites and price a double-play internet service, and what you'll find is that Cox, Comcast and Verizon are all very competitive with what you can buy in the United Kingdom, for example.

Now, you can cherry pick different offerings, and in general if you look at triple-play, television is more expensive for a comparable offering in the U.S. than it is in other countries. But if you think about the market for television, there are a lot of things going on that are very idiosyncratic per country.

So number one, I don't think you can make a general case that the U.S. is behind in the world. In fact if you look at what's happening in the U.S. in terms of the speed of roll-out and how quickly that has happened since broadband was deregulated in the U.S. just five years ago, I think what you see is that the U.S. is on a very healthy course.

On the duopoly point, because I know Larry is going to cover how duopolists behave, I'll just say I challenge the assumption at a much more fundamental level. There are not two pipes. There are at least four pipes covering 80 percent or more of Americans, the other two being 3G wireless networks from Verizon and AT&T.

And if you look at some of the latest Nielsen reports, wireless data substitution has begun on the same path as wireless voice substitution was on five years ago, and we're now at something like 25 percent of Americans do not have land line telephones. So we have begun up that path on the data side.

There are at least three pipes and new entry hand over fist. T-Mobile is building out its 3G network, Verizon and AT&T about to build out 4G networks, and of course Clearwire, backed by Google and Intel, is building out its 4G network in 47 cities as we speak today.

So, I don't think we're last in the world, I don't think we're a duopoly, and I think when you take those two arguments away, the impetus for changing policy dramatically in the U.S. pretty much disappears.

Barbara Esbin: Thank you, Jeff. Tom, if you'd like to pick up from there?

Thomas Hazlett, Professor of Law & Economics and Director, Information Economy Project, George Mason University: Sure. This session I was at last summer, where folks were going around the table talking about how far the U.S. was falling behind in the broadband race, there was a UK regulator in the group. And he kind of sheepishly jumped into the conversation and says "Well, actually I feel bit of an outsider here. I'm quite delighted to know how far behind you're falling. In fact in the UK, we have the mirrored discussion about how far we're falling behind."

And of course the fact is we're all falling behind. Okay? This is an inverted Lake Wobegon situation and I think National Science Foundation Funds should be put to finding out how the entire world can fall behind.

(Laughter.)

Thomas Hazlett: In fact the Koreans are falling behind. I don't know if you've seen their precipitous drop in percentage terms, far worse than the United States. They used to be number one. I think they're, what, number eight now? So, the decline is on and we're all sinking into the abyss.

(Laughter.)

Thomas Hazlett: Anyway, my name is Tom, and I am a PowerPoint user. And I have not understood the scope and reach of the current efforts to clean up Washington when I came down here to Capitol Hill today, and I did not know that this was a PowerPoint-free zone. I commend your efforts. I should have gone to some rehab. I think this cold turkey stuff is challenging, but I just want to say I have probably the best PowerPoint slides that have ever been produced.

(Laughter.)

Thomas Hazlett: I'm sure you'd be astonished at the quality and clarity of these slides if you were able to see them, but I will do my best to describe them.

Well, just a personal quirk of mine, I always start off by attacking the title of the session I have been asked to comment on. And so in keeping with form, I'll say that the burden of proof here is just upside down. That is to say, looking at whether the market half full or half empty, who knows?

The fact is competition is not the prime policy issue. The policy issue is are there rules out there, are there reforms out there that will actually improve efficiency? Have we not done something we could do that's going to produce some costs and benefits that pencil out to an improvement for the American people?

Now, it's simply a fact that more competition would be nice: More competition between the existing incumbents, more capacity, more innovation between them, more entry. All else being equal, competition improves things.

I will drop a small note into here: When I hear people seriously addressing the spectrum artificial scarcity problem and do it in terms of what we are doing, which is to waste the best spectrum on earth with the TV-band White Spaces campaign to eliminate any possibility of moving the TV broadcasters ever out of there through market settlements and negotiated deals -- to move this 1952 killer application out of the best 294 megahertz we have, the most valuable 294 megahertz in the world -- then I'll know that people are getting serious about this thing in terms of actual competition.

But when we address broadband policies per se, we really want to be sure that we're focusing on exactly the right issue, the right policy margin. Can we do something here that's going to create more output at a lower cost for Americans?

So per my next slide, the broadband duopoly thesis does have a testable implication. The idea that we have, ipso facto, a broadband duopoly that is a problem and needs to be regulated, that's usually about the amount of time spent flushing out the subtle issues in the analysis.

It's very rarely said, by the way, that if we had this discussion a hundred years ago and we talked about the duopoly in railroads or the duopoly in telephony -- and there was a duopoly in a lot of markets in telephony -- the issue would be is dog-eat-dog competition going to be

ruinous and eliminate all the investments that have been made. That would be the thrust of that conversation.

So, see how quickly things change just in a hundred years? We're looking at things from just the opposite way now. It's ipso facto that if you could actually pronounce the word "duopoly," you're able to move on to the presumption that regulation of that duopoly market should be undertaken.

But one thing I'd like to hang around for and look at in the broadband duopoly -- and I'm quite willing to look at it as a duopoly if that's the way people want to talk about it, cable modem versus DSL/FIOS -- is that there is a very nice testable implication there, and that is are there excess profits being earned in that market or submarket, that part of the telecommunications world? Is that a lucrative business for those cable modem and DSL suppliers? That's one thing we can actually take a minute to look at.

Then the second thing is to turn to the proper policy margin and ask the question: Will open access rules, being advocated as a remedy to the so-called broadband duopoly, actually result in the higher output?

Fortunately in this country, we've conducted laboratory experiments in the marketplace under real world conditions that allow us to make some judgment about whether or not the open access rules will actually improve investment, improve consumer choice, and in fact result in consumers getting more service in the broadband space.

So the recent report put out by Bernstein Research June 4th takes a very close look at the telephone side of the broadband duopoly. And if you want to look at the Verizon wireline -- all Verizon shareholders cover their ears for this -- the entire wireline business for Verizon now generates earnings before interest, taxes and depreciation, of about \$12 billion. Unfortunately, nearly \$10 billion of that goes for capital spending. That was for 2008.

The actual numbers that are projected end up yielding losses in 2012 and 2013. Earnings minus capital ex is a negative number. So, that's out into the future. Usually you like to get positive numbers when you're investing, and you like to run it out to some terminal value that can be capitalized at eight times, twelve times, whatever your accounts will let you get away with to show how well you're doing. These numbers are going in the wrong direction.

Now, this is the entire wireline side of Verizon, the entire wireline business. If you actually take the present values on the numbers that Bernstein, an independent third party, has put together, you get values of under \$700 per subscriber for all wireline subscribers.

The sunk cost of the investments made in those systems are well north of \$2,000 per subscriber. The current FIOS systems being built are well north of \$3,000 per wireline subscriber and there's nothing to show for that, according to the third party estimates right now. We hope for Verizon shareholders, of course, that this gets better. But the fact is looking at this market, it's hard to see where the duopoly profits are.

A lot of other evidence that goes with that, but that's just one dramatic way of putting it.

Turning to broadband policy, there is a paper that has some pretty pictures in it, a December 2008 review of network economics. Anil Caliskan, recent Ph.D. at George Mason University, she and I wrote a paper called "Natural Experiments in U.S. Broadband Regulation," where we take the natural experiments that have been done in this country where we've had different regimes for DSL versus cable modems.

Cable modem service of course has never been regulated with open access rules. DSL was fairly heavily regulated until the beginning of 2003 when the so-called line sharing rules were eliminated. And then there was a further deregulation in 2005.

Now when the deregulation of DSL took place in early 2003, which was the primary deregulation, the prediction was made that prices would go up because network sharing rules were being taken away, effectively being eliminated.

And in fact what happens very clearly in the data, when you adjust for the contemporaneous subscriber growth in cable modems to adjust for DSL trends and also with the Canadian data where we didn't have the same deregulation or regulation going on -- it all works out the same with all the controls -- the fact is that DSL growth takes off with deregulation in 2003.

And just by the end of 2006, we actually get an additional 10 million. That's 60 percent more. This is from a projected 15 million household base at the end of 2006 projected by the trend pre-deregulation. We're actually up at 25 million households approximately by the end of 2006. So there's a delta there of 10 million households growth that takes off.

The bottom line on this -- and as I said the article is out there for details and I'm out of time. I'm sorry that the slides were not available to you. They're just spectacular, spectacular graphics -- but the message is that the regulation should pass the cost benefit test. When we intervene in the market, things should get better for consumers. And we have actually run some experiments here that are fairly important. And we ought to take a good, hard look at how in fact consumers in their choices, as subscribers to one system or another or none at all, decided to become subscribers of cable, broadband or DSL providers. And we'll see that there's actually a very positive correlation between subscribership and deregulation, and a negative correlation the other way around.

Open access rules have actually discouraged and deterred the expansion of broadband networks. Thank you.

Barbara Esbin: Thank you, Tom. Larry, would you go next?

Larry F. Darby, Darby Associates and Senior Fellow, American Consumer Institute: Thank you, Barbara. I'm happy to be here and listen to my colleagues, a lot of that I agree with, so I'm going to sort of truncate my remarks rather than repeating them.

When we started discussing this, Barbara asked me to summarize some research I had been doing on duopoly market structure, the relationship between market structure, market conduct, market performance and what kinds of tests we ought to require if we're going to, as Tom suggested somewhat to like us to do, return to an earlier era of regulation.

Senator Dan Moynihan observed that folks are entitled to their own opinions, but not to their own facts. So it is in the debate over public and private roles in a national broadband policy.

In the next few minutes, I want to add some facts to some widely expressed opinions on one issue in that debate, that is the importance of duopoly market structure per se in the provision of broadband services.

Jeff is absolutely right that it's not precisely a duopoly, that most users have three, four, five, six more depending on how you define the relevant market, but I want go to core of the argument and examine sort of the case for duopoly.

Again, much of this argument is being taken place in the realm of rhetoric. I mean duopoly has about as much meaning as open networks, which has somewhat less meaning than net neutrality, which in my opinion has almost no meaning whatsoever, but that's another topic that perhaps we can talk about.

First, let me start with some opinions. One, that the FCC has allowed a cozy duopoly of telephone and cable companies to dominant the broadband access market. The reliance on this cozy duopoly has been disastrous for the U.S. Consumers pay too much for too little. Now, that's an empirically verifiable proposition, so we ought to take a look at it instead of just continuing the sale.

Opinion number two: prices are well above cost plus reasonable profit, investment is withheld until absolutely needed, innovation is actively discouraged and consumer welfare suffers. Now I don't know what they're describing, but purportedly describes the state of the broadband market.

Three, when a market has fewer than the equivalent of six equal-size competitors, the market just doesn't function properly. The implication of that statement alone is that the entire U.S. economy or 99 percent of it outside the production of wheat and oats and soybeans, is unworkable. It's nonsense.

Moreover, the FCC has ignored mountains, mountains -- let me emphasize in case you didn't get that -- mountains of evidence that our broadband markets are concentrated, anti-competitive and fundamentally broken. I didn't make that up. I took that out of some of the comments that were taken just this last Monday. So much for the opinions.

No matter how you interpret that, never mind what it says, never mind what kinds of market conduct we observe or performance we can measure, the problem is the structure. Duopoly. Not just duopoly, but cozy duopoly.

Now, I looked up "cozy" to make sure I didn't mischaracterize this characterization. My thesaurus suggests warmth and ease, commitment and comfort, family-like intimacy, close association, discrete and cautious attitudes.

Now, I don't know how managers of telephone companies and cable act in private, but I can tell you publicly they belie those kinds of assertions. So, these are opinions and we're obliged to ask, where's the beef? Where are the facts?

Let me give a few. No reasonable, well-objective, informed version would suggest any form of collusion between cable and telco broadband providers. Every indication that I can see is that they are aggressive rivals. I could go on and on and on, but my colleagues have documented these results substantially.

No innovation in the sector? Where have these folks been? Take a look at what's happened to switching, the whole digitalization, the movement from analog to digital, the movement from wireline to fiber, etcetera, etcetera, etcetera, or that firms are rationing capacity.

Somebody just mentioned the Bernstein Research study. Actually, they're not rationing capacity. According to Bernstein, they're building too much capacity, capacity that won't return a fair investment to investors, a fair return.

Or to discriminate ways to create market power? No evidence of that. Or that there is excessive profit in the sector, and I'll return to that for a moment.

The economic case for a common carrier regulation sometimes refers to two events of market conduct: The Madison River service denial case, which was taken care of many years ago, together with the Comcast traffic management and international differences.

For proponent's case, regulation ultimately turns on market structure: Duopoly. In fact, the principal corporate force behind the call for common carrier regulation explicitly stated as much in its comments to the FCC. And I quote "the broadband problem is the market itself rather than in a roster of actual or potential bad acts." In other words, the flaw is structural, not behavioral.

With that in mind with you, I want to quickly review with you from six different perspectives, some facts about duopoly. And this sort of gets to the essence of the paper we started writing some time ago.

Can you find support for these propositions in the neoclassical Industrial Organization literature? No. Views from Game Theory? No. Outcomes from Experimental Economics? No. Evidence from other sectors served by two dominant firms? No. What competition policymakers throughout the world, the United States and elsewhere say? No. Or even evidence from the broadband sector itself? These contrast sharply with the views expressed in law journals by net neutrality advocates.

I have a variety of quotes, and I'll read a couple of them: "A fair assessment of scholarly work on the topic suggests no support for equating duopoly with market failure. Economists have developed literally dozens of oligopoly pricing theories, some simple, some marvels of mathematical complexity. Proliferation of theories is mirrored by an equally rich array of behavioral patterns actually observed. Casual observation suggests anything is possible."

Indeed, the only conclusion from oligopoly theory is that there is no conclusion. It doesn't tell you anything. There's no policy relevance in it.

Similarly with Game Theory: "Recent survey, having warned the reader of the outset through many theories of oligopoly, I'm left with the task of identifying the lessons. What we are in

need of most now after reviewing some 200 different theories of duopoly, are some empirical tests and their validity.”

No matter how you read that, it says there's nothing in the theory and none of it's been tested empirically.

Now these are professional economists, some of them are even Nobel Prize winners. And this is not new news. George Stigler wrote over 40 years ago, “No one has the right, few the ability, to lure economists in reading another article on oligopoly theory without some advance indication of its alleged contribution. Most of it is meaningless,” he said.

Well, so it is with most of the theory about duopoly. We looked at Experimental Economics: There are 150 published papers by my count, on experimental economics looking at in a laboratory sense, the impact of duopoly. These by my count, are over 500 different constructions of the parameters that go into those decisions.

The issues here today, the results can be summarized. Duopoly behavior is highly circumstantial. Conduct and performance vary along continuum bounded by perfect competition and perfect monopoly. Most of the experiments had indeterminate outcomes. Most of the results were weak and not significant statistically. And a surprising number -- this is the one I like -- were inconsistent with received theory and our economic intuition.

Well, I could go on. Let me talk to you a little bit about duopoly in other sectors; one of my colleagues mentioned that.

We've taken a look at 15 other duopoly sectors where the duopoly is defined by market share of the top two firms of 75 percent or more. Let me suggest to you the following: that there is no indication that there are remediable harms that can be addressed by common carrier-type, rate and service regulation, or any kind of intervention, in markets involving Moody's and Standard & Poor, FedEx and UPS, Pepsi and Coke, Macy's and Gimbel's, Home Depot and Lowes, Kodak and Fuji Film, MCI and AT&T in the early days, LexisNexis and Westlaw, and I could go on and on and there are about a dozen others. No evidence there.

Are these markets perfect? Are they without flaws? Are they replicas of the broadband duopoly? Of course not. But a fair assessment of the usual indices of market conduct from these sectors, conduct toward rivals, conduct toward consumers and performance, profits, progress, innovation, there's no support for the proposition that duopoly requires any government intervention.

Well, I'm beating a dead horse here and I'm going to run out of time. So, I'm going to skip the views of competition policymakers worldwide and I want to go to some of the evidence that I found in the broadband sector.

Did you all get a handout that's got one sheet, one page on it? Well, let me just talk about that very, very quickly.

What I did is I looked at five or six different entities, S&P 500 and the four major duopolists that are providing broadband services; AT&T, Verizon, Comcast, Time Warner Cable, and then I

looked at a randomly chosen advocate from the sector, Google. We put Google at the end, and so we're going to compare some of those.

Excessive profits, the margins of broadband suppliers in line with the S&P 500 for 2008, and the average for the past five years -- what that data doesn't tell you is that the profits are not coming from broadband.

And again close your ears if you're a Verizon shareholder. There are serious questions about the long-term payoff to the investment in broadband: Excess returns to shareholders and returns on invested capital for broadband suppliers are well below the S&P average for 2008, and on average for the last five years. For example, AT&T and Verizon, around 5.4 -- 4.5 on total investment capital. Time Warner Cable is losing money, at minus 16.4 return on capital. This compares with S&P 500 of 11.1 and Google with 19.7.

I'm curious about what they do with the cash. If I take a look at the ratio of capital expenditures to operating cash flow, Jeff and I did a paper many years ago, it's a very interesting question. What do the folks who get the money, do with it?

Verizon reinvests 65 percent of net operating cash flow; AT&T, 58 percent; Comcast, 62 percent; Time Warner, 66 percent. So, over 65 percent of the money generated by operations in these companies is going back to capital expenditures. That is well above the S&P 500 average, and it's substantially above what I put in here for another well-known stakeholder in this area, 41 percent. Google puts 41 percent back.

There's more, but you get the idea. I have data on jobs. If you're really interested in creating good jobs, high-paying jobs, you should look at this sector.

Let me conclude. What are the implications of all this? First our message, to believers and advocates of the view that duopoly is a problem, is drawn from Casey Stengel: "Look it up." The answer is there. It's there. All you have to do is look it up.

There is no evidence to support the structuralist view, the need for common carrier regulation. None, zero, nada, zip. The evidence we find suggests the Scotch verdict, case not proven.

Markets are imperfect, but so too are government regulatory programs. Again, as Casey would say, you can look it up.

In our paper, we emphasize the differences in Type I and Type II errors at the cost of regulating too much or regulating too little. We think the cost -- the major costs are in regulating too much and not regulating too little. Our work has implications for *ex post* versus *ex ante* regulation. In English, the difference between passing rules to ensure that nothing bad happens versus waiting to address market failures when they actually happen.

We found nothing of consequence to support a case for common carrier regulation based on market structure, nor on the international comparisons, nor on two or three instances of market conduct. Common sense suggests it must be based on a thorough consumer welfare-oriented cost benefit analysis of the actual conduct and the performance of the firms in these sectors.

Then of course as someone mentioned earlier, the well-known infirmities of government efforts to manage competitive processes. And Lord knows we had plenty of experimental evidence of that after the 1996 Act was passed. Thank you very much.

Barbara Esbin: Thank you, Larry. Rob?

Robert D. Atkinson, President, Information Technology and Innovation Foundation: Well, Larry, I think you did a grave disservice to the debate by introducing so much fact and data, but I'll try to remedy that by talking generalities.

(Laughter.)

Larry Darby: Offset that.

Robert Atkinson: I'm going to base my comments on an article I wrote for the Journal of Law and High Technology which is out there on broadband competition.

As much as I respect and agree with Jeff Eisenach on many, many things, I have to say on this one, I'm getting back at you for that event eight years ago, Jeff, if you remember what I'm talking about.

Jeffrey Eisenach: Eight years?

Robert Atkinson: I have a long memory.

I actually think we are behind and I think it is a duopoly, but the reason we're behind here really has nothing to do with market structure. And by the way, the household is the right metric and if you use households, the U.S. is 12th, not 15th.

The reason we're behind are two central facts. One is we have the longest loop length of any OECD country we could find data on, and that just makes it a lot more expensive. You have very short loop lengths in the leading countries, and it makes it a lot cheaper to do this.

Secondly, we have some of the lowest computer penetration rates. Not a lot Verizon can do about that or Comcast. When you don't have computers, I don't think there's a lot of reason to subscribe to broadband.

When you put those two factors together, I think it explains much of why we are 12th and not number one.

Secondly, I think we have a duopoly. I don't think it's cozy by any stretch of the imagination, nor is it stable. So, I would have to say I fundamentally disagree with the people who filed comments to say that the flaw is structural. The problem that we have, and we do have some problems, is not structural. It is much more about the kinds of policies, or frankly lack thereof, that we have not had in this country to promote broadband.

I think maybe it was Jeff who alluded to Japan and Korea. You want to know why they're so good? It's because they have policies promoting broadband. They gave tax incentives to companies to deploy high-speed networks, they have the best demand site programs in the

world to help low-income people buy computers and use them and learn them, and that's why they're number one. So, we need to really be thinking about that.

Having said all that, I made my comment to Tom, who I also have great respect for, but Tom said competition. Everybody knows competition improves things, and that does seem to be the consensus.

Larry's cited, I think probably CFA, that six competitors is better than two. I actually think this is a case where six competitors would be much worse than two, and I want to talk about why I think that.

I think the Washington consensus that basically says more competitors in this space is better, is just fundamentally wrong. The reason I think it's fundamentally wrong is because these are incredibly expensive fixed cost capital investments that have to amortize themselves over a certain number of customers.

So if you add competition to, for example, Verizon. I love Verizon because they've given me fiber to the home so I think it's great. But let's just say that they introduce three more competitors in every Verizon territory. That means that Verizon's ability to make any returns is totally gone. The only way Verizon can make any return on that is if they have a reasonable number of competitors.

How many of you, show of hands, have multiple water pipes coming to your house? Anybody multiple sewer pipes? Multiple gas pipes? Electric wires? Okay. That's my point. Nobody in this debate says you know what? We need to have a second electric line to the home. And the reason we don't is because everybody should recognize it would be incredibly inefficient. It would be a giant waste of societal resources as to go and build a second electric distribution system in this country.

The reason we are actually in better shape than most countries is because, by in some ways, luck and also in some ways smart regulation, we had two pipes going into the home that were able to transform themselves into broadband pipes. So, we had a cable TV pipe and we had a telephone pipe. If you look at other countries, they didn't have that. A lot of them didn't have cable TV. Or if they had cable TV, they made the unbelievably bad decision to let it be owned by the telephone company, which is what Germany did. And lo and behold, there was no cable modem deployment because why would the telephone company deploy a competitive service against itself?

So we are lucky in the sense that we happen to have two pipes. And as Larry said, it provides a lot of competition. And I think that has implications for how we think about competition and, in particular, about this whole notion of underserved areas and what we should do about it.

If you look at some of the debate on what we should do with the stimulus money or even in the national broadband plan, there are people who strongly advocate overbuilding. In particular, municipal overbuilding.

I think municipal overbuilding is a huge waste of money. It's a diversion of societal resources that should go to other places. And yet there's this view that somehow if we subsidize this third pipe to the home and ideally have it be owned by a worker collective or by the city government, that we will get good results.

To me what overbuilding is it's the same thing in an inverse way of broadband taxation. It's a way for a local community to possibly benefit, but the costs are borne by other users.

Let's just say hypothetically that there's a community that overbuilds where Verizon is deploying FiOS. What they essentially do is lower the rate of return, lower the revenues that Verizon gets, and therefore every other customer has to pay more money. There's no free lunch here in the sense that if Verizon, built on an amortized fixed cost network where a large share of their costs are fixed costs, has fewer customers, they'd only have one choice, and that's to raise rates.

And so if you take communities that start to say we're going to go after Verizon or AT&T or Comcast, go after the incumbent built-up network, essentially what they're doing is cherry picking and everybody else is going to lose.

Larry had much better data than I did, but I did a back-of-the-envelope calculation once. If you take all of Verizon's profits including their wireless business, wireline, telephony and broadband, and say "You know what? If we had competition, just say we slash their profits by half then the price of their broadband fiber service goes down \$1 a month from -- this is a year ago -- from \$40 to \$39 a month." So, it clearly isn't competition or lack thereof that is driving where we are today.

By the way having said all that, I don't necessarily say that competition is a bad thing. There are certainly benefits that competition brings. It brings discipline to providers, it forces them to be innovative, and it forces them to try to cut costs and gain efficiencies.

But in this case, I think we're in an optimal situation, actually. We have in some ways, the optimal position in this whole structure, which is we have more than one provider with no competition, where you'd be forced to do the European model which doesn't get you investment, but we don't have too many providers either, which means we essentially have efficient scale, and intense competition between the two providers.

So, what do we need to do? I would argue that the right policy with regard to competition is enable, but don't promote.

If the market produces more competition, that's all right and maybe even good. But I've actually had debates with people on this where I've proposed for example, tax incentives for deploying fast broadband like accelerator depreciation or tax credits, and I've had advocates say yes, that's a great idea but we'll only limit it to new entrants. And that to me would be a bad idea because it would: A, distort the marketplace and; B, it would again artificially encourage overbuilding which I think is a terrible waste to societal resources.

For example, Seattle. I don't know if anybody is following this -- at least they were a few months ago when I wrote an article on it. Seattle was considering building a fiber to the home network even though they have pretty good DSL and pretty good cable which is going to get better.

The second piece to this is there certainly is technological innovation, and I wish I could just stop the clock and say we're going to take a timeout on this debate until 2011, and then revisit the debate. Because I think the debate will look quite different in 2011 when you have pretty robust LTE out there. And again, I'm a little more skeptical in general. I really don't think 3G is a substitute for most people. It has a modest competitive impact, but I don't think it really is a substitute. I would never give up my fiber for my 3G network, though I do think LTE does provide that with much, much higher speeds, 50, 60 megs possibly.

The other piece that's happening is the next generation satellite technology. To everybody who sort of poo-poo'd satellite including me, next generation satellite technology which is coming out around end of 2010, 2011, will get actually 3 megs. Pretty good service at pretty reasonable costs -- \$45, \$50 a month -- which certainly can be competition particularly in rural areas.

Two more points I'll make. One is there are a lot of people that say well, okay, maybe we have intermodal competition in Bethesda, but we don't have it out in so-and-so where you've only got Verizon or you've only got Comcast, and therefore we have to spend government money to build that second type.

I think that's a fundamental misreading of how competition works and pricing works. If you go out and look at what the prices are on Verizon, Comcast or any of these providers, and look and see if they price differentiate by whether there's a competitor for that home, the answer is they don't. So, they charge the same price for a home way out 50 miles from here where there's no competitor, as they do in Bethesda, Maryland. Now, if for some reason they started to price differentiate, that to me would be a reason for the FCC to be involved and to say wait a minute, we don't think you ought to do that. But as long as they don't price differentiate and they have regional pricing plans, then you have effective competition everywhere even if you only have one provider. So, you don't have to have a government policy to build even a second pipe.

Last thing I'll mention: Japan, because everybody talks about Japan as the sort of model. They were able to combine competition and high speeds.

What Japan did was, besides the fact that they own NTT which always helps if you want to be able to force investment and not worry about market rates and return -- so I actually advocate that. I think that is my policy. Nationalize? No.

(Laughter.)

Robert Atkinson: That got a rise out of Jeff.

So, they did own NTT, 40 percent of it. But what they essentially did, they said okay you've got to unbundle your DSL, you've got to unbundle your copper, and so they got a lot of

competition: Yahoo, Japan, all these. But then they said you know what? That's not good enough. We really want to get fiber to the home. So, what did they do? They basically said to NTT, you can build fiber to the home but you don't have to unbundle it. Technically they have to unbundle it, in reality they don't. If you're a competitor, you essentially cannot gain access to the NTT fiber. And now the result is they have 80 percent fiber penetration.

The Japanese aren't satisfied with that. They just came out with a stimulus plan six weeks ago, eight weeks ago. They want to get 90 percent fiber. They're investing a large amount of money to subsidize that.

So that's really, I would argue, the path we need to go down. I would argue there are three big models. There's the abdicate model which is do nothing, the regulate model which is let's unbundle or let's do muni-fiber, but I would argue the right model is the facilitate model which is really what the Japanese, the Koreans, to some extent the Swedes have done. So, thank you.

Barbara Esbin: Thank you very much, Rob. And, George, last but not least.

George Ford, Chief Economist, Phoenix Center for Advanced Legal & Economic Public Policy Studies: Well, I'll proceed like Rob and question some of my earlier commenters. Tom Hazlett, for example, has been very selective in his choice of experiments and has failed to discuss the open video service options from the past which were wildly successful and amazingly similar to what is being proposed today.

I was at the FCC at the time working with others. I was actually on detail with the Common Carrier Bureau and we would have weekly meetings with the ILECs to tell them how wrong their financial plans were and how they needed to readjust them to make the numbers better so that we could allow them to make such investments in their open video systems. And that was a wildly successful government intervention.

And as for normalizing broadband connections, I just released a paper last week. Households is better than populations, but fixed line telephone lines from 1996 is the best normalizing variable of all of the three options.

I'm going to be a little more general than Rob has been. When you talk about broadband competition, there seems to be an argument about the structure of the industry. How many firms -- let's say that's not structure, but that's usually the way it's talked about -- how many firms are there in the business?

But really that's not what people are arguing about. People are arguing about the conduct of firms. "This is a price that I don't like." "This is a pricing structure that I don't like." "I don't like early termination fees." "I don't like subsidized handsets." "I don't like congestion pricing." "I don't like metered pricing." It's all about the conduct of firms. "I don't like the type of investment you're making."

The structure only gets implicated because in the standard old-school way of thinking about economics of industries, was the structure, conduct, performance paradigm where the structure is basically causal to the conduct. I mean that's old school, but that's the way it was

looked at. So the structure only comes in because somebody says, "I don't like the conduct, I don't like the set of prices or this price structure that I see," and that's really the debate. And Tom touched on that a little bit as well.

The question in the structure-conduct-performance paradigm -- where structure is causal to conduct and conduct is causal to performance, which is the efficiency, say, of the industry -- the funny thing about that argument is that there will never be a structure that allows you to stop the conduct debate. There will always everywhere be somebody to complain. It doesn't matter what industry it is. People complain. There's no industry that gives me everything I want. None, okay? There's always going to be a complaint. And in the telecom business it's always going to be concentrated enough to blame it on the structure.

So you can fight all you want to about the structure of the industry, but in the end it's irrelevant to a large extent. Because somebody's going to complain about the conduct of the firms, it will never have an HHI of 1800 which might get you there. So you're going to have that fight.

The issue is, how do I deal with the conduct arguments? And how you deal with the conduct arguments in my opinion is this: The first question you have to ask is, is market structure important to the conduct that you observe?

For example the long debate over a la carte pricing for video. It was a big debate and people are saying, "oh prices will go up," "prices go down," "quality will go up" and that whole debate. And the one response was, "oh, but there's competition in video, we don't need to worry about it." Well it turns out that the extent of competition in the market is irrelevant to the bundling decision. The bundling decision is motivated by outside parties. Not even a monopolist would force somebody to take something that they wanted and incur a cost to do so. That would be stupid.

So, it doesn't have anything to do with monopoly, it doesn't have anything to do with competition. It's an external force, the programmers who want their things put together with certain other things, because that maximizes the value of the programming. So, it's not the cable industry.

The other question is, is the conduct implying poor performance? And Tom brought this point up. And it's not obvious that what we're observing is true. Congestion pricing is something that improves the performance of the industry. It doesn't allow some people to impose costs on others.

If we're going to say that the positive externalities of broadband should force the government to spend billions of dollars subsidizing it, because the firms don't account for the positive externality, we also need to recognize that it's fairly rare for firms to account for the negative externalities. And the fact that they do they should not be punished for that.

Metered pricing as a standard? I don't think the firms really want to do that, but it would certainly most likely encourage increased investments in the networks.

Another interesting point is that these are multi-product industries and this is very important with respect to the conduct/performance relationship.

If you take for example, a two-goods firm, and you say this firm makes zero profits and we're going to set its prices to maximize consumer welfare. This is the what-would-Buddha-do economic model of pricing. So, who can complain, right? No profits for the firm and consumer welfare is maximized. Let's fix one price at some relationship to marginal cost and then allow these products to have different relationships. There is no telling what the relationship of price-to-cost is going to be for the second good. It could be well below marginal cost, it could be well above marginal cost.

And what we observe on the conduct question for example with text messaging, is people say "oh, the price cost marginal for text messaging is huge, therefore, it's not competitive."

It's got nothing to do with anything. You can't pick one product out of the 15 that the wireless guys are selling you and say the price cost margin is high on that one, it must be not competitive. Well, they're giving you a telephone, right? A \$500 telephone -- and they basically gave you the thing or charged you a \$100 for it.

So, there are subsidies going on in there, there's some things priced above cost in multi-product settings, and some things priced below cost.

The restaurant business is probably one of the most competitive businesses in the country, right? They give you bread and water, and they charge you three times for the bottle of wine. Is that business not competitive? Of course it's competitive.

So, you can't pick these little pieces of conduct out and say this is a problem. So, when we think about what's going on in this conduct centric argument, okay, the conduct centric debate is; A, is really market structure driving this? and; B, is it really a bad thing?

It's not bad because I say it's bad; because I don't like it. Who doesn't like metered pricing? The guys that consume a lot. The guys that don't wouldn't like it because their prices would go down.

So, those are the kinds of questions that I think should be asked, and the way that I think about the problem is not sitting around arguing about how many firms there are, but asking the question does it matter how many firms there are based on what people complain about, and is what you're complaining about actually leading to bad performance from an economic perspective.

Of course it is from an economic perspective, which generally means it's not terribly important to a lot of people, but don't spread that word, please.

And that's all I got.

Barbara Esbin: Well, thank you very much, George, and everyone else.

Before we move to Q&A, I should ask any of the panelists if they'd like to respond directly to various points that they have not yet responded to. Particularly, Jeff or Larry?

Jeffrey Eisenach: I only have one thing. I agree with everything my friend Rob said, but one point, and that is on this question of wireless substitution on the data front.

I don't know how many of you have followed this kind of cord-cutting debate on the voice front. But if you go back five years, a lot of people were saying and will say even recently, that wireless voice is not an economic substitute for wireline voice. And they make arguments similar to -- Rob's a great economist so he I think will agree with the framework I'm proposing here -- similar to what Rob suggested which is, it wouldn't be a substitute for me. I mean I've got to have a wireline phone or there are a lot of people who need to have a wireline phone, or I've got a home alarm system, so I've got to have a wireline phone, or I have a fax, so I've got to have a wireline phone.

So, there are some people for whom a cell phone will never be a substitute for a wireline phone, and that's undoubtedly true. But what we're thinking about here is the question of whether or not wireless telephony serves as a competitive check on wireline telephony.

The question in other words, is not whether it is a substitute for everyone, but rather whether it is a substitute for enough people that, if in this case wireline telephony were to attempt to raise its prices above competitive levels, more people would switch to wireless than otherwise, the rate of switching would increase, and therefore do away with, deteriorate the excess profits that the wireline folks would have otherwise made from this price increase if there were no substitutes.

That's the competitive question. That's the question in competitive analysis.

Now, I would agree with Rob. I don't think we're there today. If you were to do a merger guidelines Department of Justice antitrust type review of the market for wireline data, I don't think you would see 3G wireless in that market today. But as Rob said with the advent of 4G which is upon us -- Verizon starts deployment this year, 250 million households in the next couple of years from Clearwire, AT&T and Verizon, three pipes -- as you look a year or two down the road you will find that 4G wireless is an economic substitute for data. And as a result, we won't be talking about two pipes or duopoly. If we're talking about anything, we should appropriately be talking about four, five or even the magical CFA -- Consumer Federation of America -- six competitors that people are looking for, will be the reality of that marketplace.

Again, just to be clear, if you think about yourself and think about the people you know, would you give up your wireline data connection? I don't know, but a whole lot of people and I live off a laptop. If my laptop was getting five, six, seven, eight 10 megabits up and down or down and one or two up, you know, I'm not typically watching movies on my laptop, I'm watching movies on my cable TV. I don't know that I'd pay the extra \$50 a month for cable or FiOS broadband if I'm doing it on my wireless laptop. And there are a lot of people like that. There are enough people like that, that it doesn't have to work for everybody. It just has to work for enough

people that on the margins when wireline data providers try to raise their prices, there is an alternative that enough people will switch to.

Robert Atkinson: I'm glad you now agree with me, Jeff.

Jeffrey Eisenach: Just expanding on your point.

Robert Atkinson: I agree with everything you just said actually. I think satellite has that same role at some level. It's not a full substitute or competitive substitute, but it has some disciplining power. And as technology gets better the disciplining power will get better. LTE will, I think, have that potential certainly.

Barbara Esbin: Tom?

Thomas Hazlett: Yes. I want to say that I congratulate Robert on attempting to disagree with me. It was an unsuccessful attempt and Robert had --

Ken Ferree: Well, he doesn't have the PowerPoints today.

Thomas Hazlett: Well, he didn't read the PowerPoints carefully enough. It says very explicitly *ceteris paribus*. Come on.

(Laughter.)

Thomas Hazlett: But, you know, it brings up a very good point. More competition is not a free lunch. The reason you have a market developing the way it's developed, is there are a lot of efficiencies to that. And a lot of people have tried to enter and make it a triopoly, and some of us have lost money on those stocks too. And whenever I hear one of these companies going under, if I don't own it, I think God I missed an opportunity for some more --

(Laughter.)

Thomas Hazlett: -- for some more negative returns. Get the Hazlett best seller, "How To Avoid The Capital Gains Tax For the Rest Of Your Life." Okay?

(Laughter.)

Thomas Hazlett: It's forthcoming. But a lot of people have made this mistake including when he was alive in his old days, George Stigler, who started out with many economists in the 1940s and '50s having a radical de-concentration policy. Go back and read Henry Simons from the 1930s if you want to see something crazy about de-concentrating industries or a free lunch.

And maybe it comes back a little bit, and if I gave the impression being a recovering PPTer, that there was not a cost to de-concentration, of course that's wrong. And the markets evolve as they evolve in many respects because of these efficiency properties.

I thank George Ford for recalling OVS, which was the new and improved version of VDT, video dial tone, which was about a decade-long proceeding that the Federal Communications Commission ended in the '96 Telecommunications Act. And after ten years, I found that we actually have produced an enormous amount of regulatory effort to accommodate 1,250

subscribers in Cherry Hill, New Jersey. And I counted it out. It actually was 1.53 subscribers per filing.

(Laughter.)

Thomas Hazlett: This is the formal filing not counting its parties, but I was actually stunned that we actually had more subscribers than filings.

(Laughter.)

Thomas Hazlett: And I applaud the Commission on that productivity metric.

(Laughter.)

Thomas Hazlett: I apologize to the members of the Communications Bar for that.

George Ford: I don't know how many people here that deal much with State regulation, but what's funny about the difference in the argument here in Washington and at the State level, is that there's a large number of states that have just completely deregulated telephone service. And you go to NARUC meetings now and there's just no discussion of telephone whatsoever, because they don't regulate the telephone business. And the State of Alabama just passed a law to deregulate the telephone business. You ask the State commissioners: We deregulate telephone, what happened? And you'd think there'd be some giant hearing with thousands of people with their arms raised and torches outside.

Thomas Hazlett: Like they took away people's analog television.

George Ford: Yeah, exactly. And there's just not. And the telephone business, is at least as much like the broadband business.

I mean when you think about the players, it's the cable industry and it's the telephone industry and it's the wireless guys. We're sort of all in the same thing. And maybe the wireless guys are a bit more in the telephone business than the broadband business at this point. I think that's going to change a little bit, but you're seeing the people at the grass roots that are really involved at this saying that, we deregulated and it's really no big deal. Prices didn't go up.

So, from a practical perspective, I think there's a difficulty with the State, but then again like I said it's not about structure of the industry, it's about I don't like that price.

And to some extent you read the debate and you realize -- and this is just something I thought of the other day -- that the arguments today are that price is the enemy of the people. The price system is the enemy, the market system is the enemy, and that's the danger that we're facing.

There is no solution other than the one that I mandate that's suitable to everybody, but who that person's going to be is the interesting question. Some people think wireless is a substitute, and Rob may not, so it depends on whether Rob's in charge or am I in charge. So, that's the problem.

Robert Atkinson: Could I be?

George Ford: Sure. Better you than me.

Barbara Esbin: Well, if you're all almost done, I'm going to pose one question to Larry first, and anyone else can answer it second. And then I'll open questions to the floor.

You indicated the need to compare imperfections in the marketplace to imperfections in the regulatory process. Now we've heard of several of them, but would you like to elaborate on that?

Larry Darby: Imperfections well, if you think either is perfect you haven't been watching cable news recently. I sometimes sit there with a stopwatch and try to find out which commentary is more negative about how the government works or how markets work. It's kind of a coin toss.

My major concern about how government works, and especially with respect to this issue in this sector, is I'm firmly convinced that regulators and politicians simply do not give enough credence to how capital markets work.

The fact of the matter is that, I agree with other things that have been said, it's not all about structure, not necessarily about conduct, but at the end of the day no national broadband policy makes any sense if it does not cultivate an enormous amount of capital formation out of the private sectors.

Somebody mentioned \$2000 to \$3,000 per household. In rural areas where loop links are long, you can get that up to \$4000 or \$5,000. If you start trying to meet the requirements of effective competition and have six alternatives for each consumer, you're looking at twelve to \$14,000.

Anyway, suddenly, the numbers really, really, really get big. I spent four years on Wall Street and as an academic economist, I learned a lot about how financial people and investors think that are different from how we economists think. They're very concerned with risk, they're very concerned with return, they're very concerned with growth, and they're very concerned with the ability to amortize these investments in a reasonable period of time.

Some years ago I wrote a paper that looked at, drew a matrix between what the government does -- a variety of government activities, the FCC in particular -- versus risk, return, growth, earnings and opportunity, and tried to spell out that impact on the cost of capital.

To sum all that up, it seems to me that a lot of things that are being presented from other perspectives to the FCC, that we ought to regulate this, we ought to make sure it's open, we ought to, blah blah you pick it, is basically going to dry up private capital. And by the way, Bernstein Research is not the only one that expresses this. When we start thinking about putting in four, \$5,000 or \$3,000 or even \$2,000 per household, you know, you make investors very, very, very nervous.

So, my main concern would be that this administration and this group of regulators be well informed by the impact of the rules they impose on the willingness of people to give up their

401(k). And I would just ask any of you as a thought experiment, would you put your retirement fund in FiOS? Point one.

And point two. In order to encourage you to put your retirement fund in FiOS, what would you like the FCC to do?

(Laughter.)

Larry Darby: Now, I'll send a questionnaire around a little bit later, but there are a lot of people like you and like us. Thank you.

Thomas Hazlett: I think you need a paramedic for Link Hoewing right now.

(Laughter.)

Jeffrey Eisenach: There's an easy answer to that question. The easy answer to that question is you would like the FCC to do what Public Knowledge and Free Press and others seem to want them to do, which is impose rate of return regulation, which is what we're talking about, on Verizon and the other broadband companies.

Ultimately what this boils down to, and this is from Mark Cooper's Consumer Federation Of America filing at the FCC on Monday: Mark says the debate is not between capitalism and socialism as it was recently portrayed in the election campaign, but between a pragmatic, progressive approach to capitalism that was implemented in the U.S. in the New Deal and the radical market fundamentalism approach of the last 30 years.

And he's being truthful here. I mean one lesson I think we all ought to learn is listen to what people say because they might mean it. There is this tremendous push to go back to what amounts to when you regulate something as they regulate a monopoly, there's kind of no place in between regulating and not regulating.

Ultimately, you have to control prices, and ultimately you have to set prices on the basis of some standard, and ultimately the standard is a rate of return. The only standard that makes any economic sense at all and the one that was adopted during the New Deal is a rate of return-based standard.

You try to set prices in order to get a rate of return such that the monopolist can continue operating and invest in new capital to the new infrastructure to the extent it makes sense.

It's a time-honored model. We're still using it for electric companies and some other industries. That's what we're talking about here. And if that were to happen, you're going to be able to clip your coupons on the Verizon FiOS system just the way you could clip your coupons on AT&T for about 50 or 60 years between 1930 and 1980. It will be a nice stable rate of return.

If you look at how well that worked at the FCC, go back and read Ronald Coase 1959 article about the Federal Communications Commission and ask yourself the question, is regulatory failure something that we ought to start being concerned about?

You can look at 1996 and everything that happened after that. That was ugly. Go back and look at 1956 and AT&T rate hearings. There was no benefit for consumers coming out of that process.

Robert Atkinson: I'll just quickly add, Jeff, I think it's not just that people are harkening back to the New Deal. I think there are people in this debate who are harkening back to the 1890s Populist movement.

Jeffrey Eisenach: Right.

Robert Atkinson: There's a cartoon I had in a book I wrote on the chapter on the history of old positions and new technology, and there is a wonderful cartoon from the Populist movement and it has a little tag line, something like, "Our Platform." Then it has a picture of a railroad station with a telegraph line. And it has US Railroad and Telegraph System, and that was the platform, government ownership of these essential networks.

And I think partly there are people in this debate who really would just move beyond rate of return regulation and go to municipal or coop-owned networks as, really, these are inherently public interest goods, they ought to be owned by the public.

George Ford: And inevitably, that means monopoly.

Robert Atkinson: Well, maybe big government monopoly.

George Ford: You have to get rid of people to make that happen, and I think how you make that happen could be interesting. How do you get people to leave the business?

Barbara Esbin: I'm going to let Larry have the last word on this, and then we will go to audience questions.

Larry Darby: I don't know if I agree with Jeff or not, but I was an actual practitioner of rate of return regulation at the FCC. And while I was there, we had two rate cases involving AT&T. One of the rate cases required a rate reduction, and the other one was when they were under the allowed rate of return, it was implication for a rate increase.

I think the real question about what kind of regulation we're talking about here is if we were to impose rate of return regulation right now, we would have to raise rates substantially in this sector in order to get it up there.

And if I look at what Rob's writing about, the demand elasticity for broadband, and look at my table. If we bring all of these companies and get the rate of return up to what's the weighted average cost of capital which probably is in double digits now, we get all these returns up to double digits, we're probably looking at \$140, \$150 per household of broadband.

Even our elasticity studies don't go through all of that. Again I think we're talking less about rate of return regulation than we are sort of hands-on regulation of sort of traffic management. For heaven sakes, we talk about price discrimination. We don't want to hinder the carrier's

ability to differentiate their prices and differentiate their products the way it's done economy wide.

So, anyway, thanks for the equal comment.

III. Questions & Answers

Barbara Esbin: I think this is a good break to change the tape on the video while we move to audience questions. We have a microphone holder, Adam Marcus, who will come around and set you up to be recorded. I ask, though, if you have a question, you first state your name and affiliation, and then ask your question.

If we have time at the end, I'll ask our panelists to have a final 30-second opportunity to tell the new FCC what to do or not to do.

Larry Darby: I would take that 30 seconds.

Barbara Esbin: Okay.

Larry Darby: Some time ago there was a hearing on the Hill about net neutrality, and one of the senators said "Who among you would stand up and defend price discrimination in this sector?"

My advice to the next chairman is I, for one, stand up and wholeheartedly support price discrimination in this sector. It's everywhere, and the downside of not permitting price differentiation is an enormous reduction in economic welfare. So, that would be my advice.

Barbara Esbin: Okay. We'll let the other four speak at the very end after we've had a few audience questions. I hope somebody has them after I've done that.

Anyone? Anyone? No?

Jeff O'Connor, Competitive Enterprise Institute: I'm Jeff O'Connor with the Competitive Enterprise Institute -- well, an intern. Mr. Atkinson mentioned facilitating for competition in growth in broadband as the way to go, and I just wanted to ask him to suggest two or three what he thinks are the most important ways that our government should do that.

Robert Atkinson: Thank you. I think in three different areas. One is remove barriers to production. For example I just testified Monday on a bill to ban discriminatory wireless taxes. Things like excessive right-of-way fees that localities charge to make money off of national broadband deployment. Spectrum reform would fall into that same category on the production side.

Facilitating of that, I frankly think we need to copy the Japanese and the Koreans and move to some sort of a more generous expensing of these very high-cost risky long-term capital investments that in some cases may not be that long term, with the way depreciation, innovation is going. So have some sort of expensing provisions that are more generous than what we've got today.

And then I would put a lot more focus if I were the FCC, although really it isn't their bailiwick, but what's got to be a core part of the plan is on the demand side. I think that's where we're falling down as a nation, and related to that I would do some sort of USF for broadband. Something along the lines of one-time reverse auctions for capital costs, assuming that the Recovery Act doesn't solve the problem, which it won't. It's a nice start, but it won't solve the problem. Then much more on the digital demand side, with computer training.

I support even subsidies for computer ownership, like Lifeline and Link-Up, those sorts of programs, but a lot of it on the training side and the facilitation side.

Barbara Esbin: Anyone else?

Mark Adams, The Progress & Freedom Foundation: Mark Adams, PFF. This is to Dr. Atkinson.

When you talk about the societal waste that would be involved in having many lines going into the same property, I was thinking about when new technologies are rolled out, we had VHS and Betamax, more recently DVD, HD and Blu-Ray, we often don't know in advance which technology is going to be the most efficient.

And perhaps in the case of broadband, do you think it's possible we might have competing technologies or is that something we can rule out?

Robert Atkinson: Well, you're absolutely right that we don't know those things. Although in most cases, those things get sorted out fairly quickly and there aren't two standards. Sometimes there are.

But in all those examples you alluded to, there wasn't a government policy to add a third standard, of hey, we don't like really Blu-Ray or HD, we're going to come up with LD or something.

So frankly I think for the foreseeable future unless for some bizarre reason somebody gains some weird advantage that I don't see, we'll just have two pipes going into homes, and then we'll have the third, wireless, and they each have pros and cons and advantages.

I think the idea is there are people who say that it has to be fiber. I like fiber a lot but I think that there are other technologies that can perform as well. I think we should be agnostic on the technology and not agnostic on the performance. We want better-performing high-speed networks.

My only concern would be that government A, picks that, or B, says that we have to get additional ones more than what the market itself is going to provide.

Barbara Esbin: Anyone else?

Ken Ferree: I'll pass on the consensus on your last view, right?

George Ford: I would like to make a comment a little bit related to that. There's a lot of argument about being behind in broadband and I agree with Rob completely.

We really in this country have a demand side problem more than a supply side problem, but here's the problem with that as you spend. I mean the purpose of broadband is not to run up subscription counts. That's not what it's about. Broadband is important because it generates some value, some benefit to people.

If you're spending thousands and thousands and thousands of dollars to convince somebody to buy the service, the marginal contribution of that to society's welfare is trivial if not negative.

So the externality effect cannot be that big to justify some of the things that people have proposed. We're down to the point where the government is having to throw billions of dollars at this problem to try to get more subscriptions. We're sort of at the end of the highest valued contribution of broadband from a subscription perspective and now we're in the world where it's really, really expensive to get people to join the network. And if it's really expensive to get people to join the network, then the marginal contribution of those subscribers is low.

So are we behind? We're not so far behind that it doesn't cost us \$7 billion to make things better, which is saying a lot, I think.

Jeffrey Eisenach: At the risk of adding facts and data, which I'll try to do a little bit of, one of the things submitted on Monday was a study by Nielsen looking at who does and doesn't have internet access, and it's really interesting data.

Of all of the households in the U.S. that do not have internet access today, about 25 percent of those households have children. The other 75 percent are adults and it seems to me ought to have the option to choose not to have internet access, and they have so chosen.

There is a presumption, again a big misunderstanding, that a hundred percent is the right number. A hundred percent may be the right number for health insurance.

Or it may not be. You can have your own opinion on that. But whatever might lead a lot of people to think that a hundred percent is the right number on health insurance -- which is their externalities. When you break your leg and you don't have health insurance, we all pay for it -- That does not exist in the broadband world. If you choose not to have broadband, you're not hurting me. You're an adult.

So, for the 75 percent of households in the United States who have chosen not to have broadband today, I think we ought to let them rest. We ought to make it available and I think their argument is from a rural development perspective for making broadband ubiquitously available. That's what I think the \$7.2 billion is about and we might spend some of that wisely.

But the notion that we ought to assume, that 100 percent is the right number in terms of subscriptions, I think is just wrong and misguided.

George Ford: Well, there was actually a recent survey in a state I won't mention, about broadband subscription. These mapping programs, by the way, usually do extensive surveys which are very informative, where one of the top reasons people who didn't buy broadband that had it available, was they do not want to bring pornography into their house.

Now, that's an interesting point. Are we going to force people who view the internet as being a negative contribution to their homes, are we going to force them to buy it, or are we going to prohibit a company that says I will block all pornography from coming into your house at my end of the deal so you don't have to worry about it at your end of the deal, which is in fact quite complicated? Are we going to stop them from doing that under the umbrella of network neutrality?

Those are the interesting little problems that are going to have to be dealt with as we push to the final frontier of broadband adoption here.

Robert Atkinson: I just want to respond. Jeff, I think you're setting up a false dichotomy. I mean I would not mandate that a hundred percent, I'd mandate 99.8 percent.

Jeffrey Eisenach: We knew you were a market-oriented democrat.

Robert Atkinson: Exactly. Exactly.

(Laughter.)

Robert Atkinson: Market-oriented democrat.

The right number is more than what we have, and it's less than 100 and more than 70. And absolutely there are people who simply don't want it for whatever reason, George's point. But there are lots of people that are on the margin who don't know about it, don't understand it, don't have digital skills. Those are people that we can help at a reasonably low price.

Secondly, there are lots of homes slightly above the cost point, above the cost rim that we can help supply to at a reasonably low price. Yet there are people out there who say a hundred percent of people should have fiber to their home. Even the Alaskan igloo guy, rather nice story but he's 200 miles from the nearest of anywhere. I think he'd be, what, 400 million to get him? So, I don't think it's quite the same way.

And the other piece of this is a very nice study by Loren Hit who is a professor at Penn, and he actually tries to rebut the studies on externalities on IT investment business by saying the externality is only one to one, it's not higher.

In other words his argument, and I think it's pretty good data, is that there is a strong externality from corporate investment and IT that corporations benefit, but for every dollar they invest, the economy has a whole benefit to buy an extra dollar. That's a pretty large externality and I wouldn't be surprised if broadband doesn't have similar externalities.

So the smart policy to me is to figure out where are those investments that make good sense, and you don't want to go too far with them. But at the same time, I don't really think that avocation of a policy of just leaving it completely up to the market is where we should be either.

Barbara Esbin: Tom?

Thomas Hazlett: Yes. One thing that just came up in passing as actually a quite interesting market to look at as part of the broadband issue is the television market, which of course is a multichannel cable distribution at this point in time, although I hear there's something happening with the 1952 technology today.

The experiment in the United States over the last couple of decades has actually been quite profound. That is to say, at this point in time there is quite a bit of competition in the United States video distribution market through two nationwide satellite programming distributors, cable television networks, and now the entry of head-to-head competition by the telephone operators.

This is an area of expanding market structure in terms of the numerical judgment on competition.

And in fact this is the golden era for video programming. I mean there's just an absolute explosion. If you look at the video industry, there is a huge shift in the terms of trade. Now, more than half of all industry revenues are going to the programmers, not to the operators. It was 90/10 in favor of the operators 20 years ago.

There's a profound shift. We're getting a flood of new programming. Somebody mentioned that internationally the U.S. has higher prices for television. Have you been in a German hotel and turned on the television? Have you ever gotten stuck in the UK with one of those three-day cricket matches dominating the waves?

(Laughter.)

Thomas Hazlett: They don't have Bridezilla. Okay? I'll just leave it there.

(Laughter.)

Thomas Hazlett: But the United States we actually have 500 channels. And if you have one of the actual participants in the digital TV transition supplying your house, you have hundreds of choices.

Now, of course that comes to the broadband question in a very direct way. That package is there, there are choices, and when people walk up into the broadband world and say well, "It's obvious we need a hundred megabits per second to every home in America, that's what we need."

And if there's any conversation to be had at that point, you say well, for what? And the answer, video. Okay?

And if they're pressed when you point out that the video is already there in the form that it is and the DVR is actually a nice little device to help make that a much smarter pipe, of course the fallback position from there is well, we need gaming. Okay.

Now, we all want these platforms that are going to do a lot and there's a lot of option value in these things, but, again, it's not free. In fact, it's really expensive to just start buying these

options without knowing what's going to ride on there. And indeed it's fairly clear if gaming is your game, then wireless becomes a hell of a substitute. A hell of a substitute.

Other devices that are not computers become substitutes in very nice ways and fixed systems may not be. It may be the iPhone that's the gaming innovation and platform that is going to carry us, competing with the G phone and RIM BlackBerry and so forth in the smart phone space.

Which takes me to my favorite topic, and that is spectrum. What the FCC needs to do is to put some overlay rights over that very precious TV band spectrum and do something useful with that to get the LTE systems and the next generation of wireless technology in a very robust way into the consumer's hands and not waste those precious resources which currently are on a trajectory to be used just as effectively next year as they have been for the last 60 years by the spectrum allocation system.

Barbara Esbin: Well, thank you, Tom. George, do you want to put in your final words?

George Ford: I've probably said enough today.

Barbara Esbin: Okay. Jeff?

Jeffrey Eisenach: Yes, I started out saying that groups making these big filings with the FCC basically want to go back and re-examine ten years.

So, ten years ago this year the Chairman of the FCC, Bill Kennard, really began the set of policies that we have implemented for the past ten years. It was in the context, as I recall, of TCI and AT&T merging. AT&T was in the process of making its first of dozens of catastrophic investments. And that one I think was the TCI/AT&T merger. And Bill Kennard was asked to pass on that.

And a lot of the same groups that filed on Monday were at the FCC ten years ago, saying that you need to impose an open access condition on cable, you need to let multiple ISPs operate over the cable pipe rather than let cable just have its own ISPs.

So, basically: imposing unbundling, imposing a set of policies that are the opposite of the policies that we ultimately ended up imposing, and arguing for the policies that these groups still want to impose today.

Let me read to you what I think are some of the most important words that have been uttered in telecom policy in a decade in a speech given by Chairman Kennard ten years ago.

He said then "It is easy to say that government should write a regulation to say that as a broad statement of principle that a cable operator shall not discriminate against unaffiliated internet service providers on a cable platform. It's quite another thing to write that rule to make it real and then enforce it. So, if we do have the hope of facilitating a market-based solution here, we should do it, because the alternative is to go to the telephone world, a world that we are trying to deregulate, and just pick up this whole morass of regulation and dump it wholesale on the cable pipe. When I look at the cost of regulation versus the benefits, when I look at the

prospect that we can have a robust competitive broadband marketplace, I conclude that we have to resist the urge to regulate and let it play out for just a while longer."

That's Bill Kennard in 1999, and that is what I hope every member of the FCC would read.

Barbara Esbin: Thanks. Rob, do you want to take the final bite?

Robert Atkinson: I think at the end of the day, in this debate people choose the camp they're in, and then they choose the data and argumentation to support that. And I think the most important thing the FCC can do is to figure out what camp it's in. Are they in the advocate, facilitate, or regulate camp?

They ought to be in the facilitate camp, in my view. Once you're in that camp, then what follows is pretty straightforward, I think.

Barbara Esbin: I want to thank my panelists and the audience. I think it's been a really great session, and I now know that for my title, the answer is it simply doesn't matter, and I should never have posed the question.

(Laughter.)

Barbara Esbin: Thank you all for coming.

IV. Speaker Biographies

Robert D. Atkinson is Founder and President of the Information Technology and Innovation Foundation, a Washington, DC-based technology policy think tank. Before coming to ITIF, Atkinson was Vice President of the Progressive Policy Institute and Director of PPI's Technology & New Economy Project. While at PPI he wrote numerous research reports on technology and innovation policy, including on issues such as broadband telecommunications, Internet telephony, universal service, e-commerce, e-government, middleman opposition to e-commerce, privacy, copyright, RFID and smart cards, the role of IT in homeland security, the R&D tax credit, offshoring, and growth economics. He is a board member or advisory council member of the Alliance for Public Technology, Internet Education Foundation, NanoBusiness Alliance, NetChoice Coalition, the Pacific Institute for Workforce Innovation, and the University of Oregon Institute for Policy Research and Innovation. He received his Ph.D. in City and Regional Planning from the University of North Carolina at Chapel Hill in 1989.

Larry F. Darby is President and Founder of Darby Associates and is Senior Information Technology Fellow at the American Consumer Institute. He founded Darby Associates in 1988 and advises a broad spectrum of clients on issues in broadcasting, cable television, domestic and foreign telephony, trade and technology, and domestic common carrier regulation. Prior to this, he was Vice President in the Telecommunications Investment Banking Group at Lehman Brothers. He also served as Chief Economist and Chief of the FCC's Common Carrier Bureau and as Senior

Economist in the White House Office of Telecommunications Policy. Darby is Professorial Lecturer in Telecommunications Finance at the George Washington University Graduate School and Adjunct Professor of Law at the New York Law School. He earned a PhD in economics from Indiana University in fields of industrial organization and public finance.

Jeffrey A. Eisenach is Chairman and a Managing Partner at Empiris LLC, a Washington, DC-based economic consulting firm, and an Adjunct Professor at George Mason University Law School. Dr. Eisenach's practice focuses on economic analysis of antitrust, regulatory and consumer protection issues. Prior to joining Empiris, Eisenach served as Chairman of Criterion Economics and, previously, as Chairman of CapAnalysis, the economic consulting arm of the world's largest antitrust law firm, Howrey LLC. He has served on the faculties of Harvard University's Kennedy School of Government and Virginia Tech; as President of The Progress and Freedom Foundation; and, as a scholar at the American Enterprise Institute, the Heritage Foundation, and the Hudson Institute. Eisenach is currently a member of the board of directors of PowerGrid Communications Corp., and serves on the advisory boards of the Pew Project on the Internet and American Life and Washington Mutual Investors Fund. He holds a Ph.D. in economics from the University of Virginia and a B.A. in economics from Claremont McKenna College.

Barbara Esbin is Senior Fellow and Director of the Center for Communications and Competition Policy at The Progress & Freedom Foundation. She served for over fourteen years at the Federal Communications Commission, most recently as Special Counsel in the Market Disputes Resolution Division of the Enforcement Bureau. Before joining the Enforcement Bureau at the FCC, Esbin spent four years as Associate Bureau Chief at the Commission's Media Bureau. There, she represented the Bureau on a number of inter-agency efforts and led the review of several major industry mergers and rulemakings addressing cable and broadband competition issues. Esbin has also served as Associate Bureau Chief of the Cable Services Bureau, Special Counsel for Competition and Senior Policy Advisor at the Wireless Telecommunications Bureau, and Attorney-Advisor and Assistant Tariff Division Chief of the Common Carrier Bureau. She has spent time in private practice, specializing in cable and broadband regulatory issues between her two FCC engagements, and electric utility regulation prior to joining the FCC. Esbin had two judicial clerkships in the North Carolina appellate system and is a graduate of the Duke University School of Law and Antioch College.

George Ford is the Chief Economist and co-founder of the Phoenix Center for Advanced Legal & Economic Public Policy Studies in Washington, D.C. Ford has served as a professional economist at the Federal Communications Commission and in the private sector for telecommunications firms both big and small. Much of his research has focused on the application of economics and econometrics to public policy issues. He (co)authored the chapter on telecommunications competition in the *International Handbook of Telecommunications Economics*. Ford has a Ph.D. in Economics.

Thomas W. Hazlett is Professor of Law & Economics at George Mason University. In addition to his duties as a professor, Hazlett directs the Information Economy Project at the National Center for Technology and Law. He is currently a columnist for the Financial Times' New Technology Policy Forum and frequently provides expert testimony to the courts, government agencies, and the U.S. Congress, serving as a consultant to public and private organizations throughout the world. Hazlett has held faculty positions at the University of California, Davis, Columbia University, and the Wharton School of the University of Pennsylvania. In 1991-92, he served as Chief Economist of the Federal Communications Commission in Washington, D.C. He received his PhD in Economics from U.C.L.A.

Related PFF Publications

- [Comments on the FCC National Broadband Plan Notice of Inquiry](#), W. Kenneth Ferree & Barbara Esbin, June 8, 2009.
- [Regulatory Reality versus Theory](#), Barbara Esbin, Progress Snapshot 5.5, May 21, 2009.
- [Functional Separation, Italian Style](#), Barbara Esbin, Progress on Point 16.9, March 24, 2009.
- [Broadband Policy: Does the U.S. Have It Right After All?](#), Jeffrey A. Eisenach, Progress on Point 15.4, September 9, 2008.

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