



Testimony of

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on behalf of

**Free Press**  
**Consumers Union**  
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before the

**United States Senate**  
**Committee on Commerce, Science and Transportation**

Regarding

**Communications, Broadband and Competitiveness:**  
**How Does the U.S. Measure Up?**  
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## SUMMARY

Free Press<sup>1</sup>, Consumers Union<sup>2</sup>, and Consumer Federation of America<sup>3</sup> appreciate the opportunity to testify on broadband competitiveness. As consumer advocates, we strongly support policies that will bring more broadband competition to American households. The current broadband problems we face are severe and the consequences of resting on the status quo unacceptable. Recent broadband policy at the FCC has not embraced a free market approach to enabling competition, but rather supported the entrenched incumbency of a rigid duopoly. Going forward, we must break out of this box and reassert the principles of public interest communications policy enshrined in the Communications Act—to bring essential communications services at affordable rates to all Americans.

We recommend this Committee undertake a sweeping inquiry into a variety of broadband policy options and begin moving toward a comprehensive national broadband policy. Step one in this process will be a thorough confrontation with the problems in the current broadband market. It is important that we set aside the myths and excuses we have used to justify our broadband troubles up to now. The reality is that the US broadband market has significant failures in the three metrics that matter most: availability, speed, and value (cost per unit of speed). Despite years of promoting universal availability, there are still roughly 10% of American households that lack a terrestrial broadband provider. We pay more for a lot less bandwidth than our global competitors. Finally, we do not have a competitive market that is pushing speeds up and prices down at a rate sufficient to raise our stature relative to the rest of the world. In a study released this week by the Organization for Economic Cooperation and Development, the US has dropped from 12<sup>th</sup> to 15<sup>th</sup> in broadband penetration among the 30 member nations in the last 6 months. Our growth rate relative to the other OECD nations over the past year ranks at 20<sup>th</sup> place.

Tackling these challenges will take bold, aspirational leadership. To begin, we need to improve the depth and breadth of the data the FCC collects from broadband providers so that we better understand our problems and our progress. We must then undertake a variety of policy initiatives to bring competition to the marketplace including: ensuring spectrum auctions produce real competitors not vertical integration; opening the TV white spaces for unlicensed use; protecting the rights of local governments to offer broadband services; guaranteeing the interconnection of networks on nondiscriminatory terms; transitioning USF programs to broadband; safeguarding the Internet's free market for goods, services and speech through network neutrality rules; and investing in programs that bring equipment and training to underserved communities.

We rely on the market forces of a duopoly to produce robust cross-platform competition at our peril. When the chief supporters of the status-quo, wait-and-see approach to the arrival of a third competitor to DSL and cable are the incumbents themselves, we should understand that they do not expect it will happen. Further, we can see that most of the global leaders in broadband performance have embraced so-called “open access” network rules, policies that bring competition both *between* and *within* technology platforms. This combination of “intermodal” and “intramodal” competition is the key to regaining our once-lofty stature as the world's technology leader. We must not sacrifice the long term economic and social interests of the country for the short term interests of a duopoly marketplace that has long shielded itself from free market competition. This is a paradigm shifting moment for American telecommunications. It is imperative that we choose wisely. We look forward to working with the Committee as it moves forward.

## **Part I. What is the “broadband problem”?**

For many years now, the Congress has grappled with the policy challenges of realizing universal, affordable access to high-speed Internet services. The facts are unambiguous. A significant number of American households—around 10%—have no available terrestrial broadband service.<sup>1</sup> A much larger percentage—over 40%—have service available to them, but they do not subscribe, foregoing the social and economic benefits of connectivity because of high prices, a lack of equipment and training, or simple disinterest.<sup>2</sup> Rural areas lag behind urban areas in broadband access. The poorest among us are the least likely to gain access to the technologies that could lead to social mobility. The cost to our economy and the quality of life in our society mounts each successive year that these problems go unsolved. Meanwhile, alarmingly, the US is falling behind the rest of the world in broadband penetration and market performance, ceding the tremendous benefits of leading the world in network connectivity to others.

Once called the digital divide, this policy issue is now often recognized by the simple but unenviable moniker: the “broadband problem.” Dozens of scholarly articles and books about the subject have been written in an effort to clarify the stakes, the options, and the evidence in favor of one solution over another. It is one of the most important policy issues of our time. It would be impossible for us to provide in this setting a full accounting of the broadband problem. Instead, we will offer the Committee a discussion and recommendations to answer two central questions: what is going wrong and what should be done about it.

We are unique among the world’s leading technology nations—we lack a comprehensive national broadband policy. There is no time like the present to remedy this situation by applying visionary leadership in this space and establishing a broad set of policy initiatives to right the ship.

### ***Evaluating the US Broadband Market***

For years now, the US government has set goals to realize universal, affordable broadband service for the country. This is consistent with our long history of using policy to promote the expansion of essential communications services. In 1934, when the Communications Act set the goal for communications policy “to make available to all people of the United States, a rapid, efficient, nationwide and world-wide wire and radio communications service with adequate facilities at reasonable charges,” two-thirds of the American people did not have telephone service. It was this forward looking commitment, sustained over decades, which gave America the finest communications network in the world.

The President called for us to reach the universal broadband milestone by this year. There is now no chance we can achieve that result. While it is true that the total number of broadband lines deployed in the US is rising and the total number of broadband users is now near 50% of the

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<sup>1</sup> “Broadband Deployment is Extensive throughout the United States, but it is Difficult to Assess the Extent of Deployment Gaps in Rural Areas,” Government Accountability Office, Report to Congressional Committees, GAO-06-426, May 2006.

<sup>2</sup> Extrapolated from “High-Speed Services for Internet Access as of June 30, 2006,” Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission.; calculated assuming one line per household, based on July 1 2006 Census household estimates; S. Derek Turner, “Broadband Reality Check II,” Free Press, Consumers Union, and Consumer Federation of America, August 2006, Available at <http://www.freepress.net/docs/bbrc2-final.pdf>

country, the US growth rate in broadband penetration compared to other nations is not encouraging. Looking at the amount of growth in broadband penetration between December 2005 and December 2006, the U.S. is ranked 20<sup>th</sup> out of 30 among OECD nations.<sup>3</sup> Simply put, other nations are surpassing us. In 2004, when the US was ranked 10<sup>th</sup> in broadband adoption among industrialized nations, the President quipped, “Tenth is 10 spots too low, as far as I’m concerned.”<sup>4</sup> Since then, study after study evaluating the broadband performance among the world’s leading nations has shown the steady decline of the US down the ranks. Though some have scrutinized the data from these studies to find some qualifications to ease our wounded pride, the trend lines are not in error. We trust the President’s displeasure has grown with our underwhelming performance and that he will gladly work with Congress to solve these problems as rapidly as possible.

The broadband problem is most commonly assessed through a raw headcounts of households that have access to high-speed Internet service, what services are available, and how many consumers subscribe to those services. These are valuable data points that give us a picture of competition in the marketplace and consumer behavior. Accordingly to the best available data:

- **Extrapolating from FCC data, nearly 60% of U.S. homes are not broadband adopters.**<sup>5</sup>
- **The rate of residential broadband adoption continues to slow.** From June 2005 to June 2006 the number of residential advance service lines increased 34%. But from June 2004 to June 2005 the increase was 62%.<sup>6</sup>
- **37% of ZIP codes have one or less cable and/or DSL provider.**<sup>7</sup> Given that FCC ZIP code data overstates the level of broadband deployment, this should be viewed as a conservative figure.
- **Some states have large gaps in coverage.** Over 40% of South Dakota households are not wired for cable broadband. Over 40% of New Hampshire and Vermont households are not wired for DSL.<sup>8</sup>
- **The broadband market remains a duopoly.** 96% of residential advanced services lines are either cable or DSL.<sup>9</sup>
- **There are no viable 3<sup>rd</sup> “pipe” competitors.**
  - From June 2005 to June 2006 there were only 637 new broadband over powerline (BPL) connections added, bringing the total to just over 5000 nationwide, or 0.008% of all U.S. Broadband connections.<sup>10</sup>

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<sup>3</sup> Organization for Economic Cooperation and Development, “OECD Broadband Statistics to December 2006”, <http://www.oecd.org/sti/ict/broadband>.

<sup>4</sup> Richard Hoffman. “When It Comes To Broadband, U.S. Plays Follow The Leader,” *InformationWeek*, 15 Feb 2007, <http://www.informationweek.com/story/showArticle.jhtml?articleID=197006038>

<sup>5</sup> “High-Speed Services for Internet Access as of June 30, 2006,” Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission.; calculated assuming one line per household, based on July 1 2006 Census household estimates.

<sup>6</sup> *Ibid.*

<sup>7</sup> *Ibid.*

<sup>8</sup> *Ibid.*

<sup>9</sup> *Ibid.*

<sup>10</sup> *Ibid.*

- From December 2005 to June 2006 the number of advanced service satellite broadband connections DECREASED by 40%.<sup>11</sup>
- Mobile wireless broadband from cellular carriers enjoyed a rapid growth rate in the last year. However, these connections remain slow and costly compared to wireline alternatives. They are not substitutable competitors with DSL and cable modem, but rather form a complementary market dominated by vertically integrated firms with little incentive to cannibalize wireline market share. (See below for analysis).

This record of performance has not positioned us well in the race for global competitiveness—with all of the economic and social benefits at stake. According to the OECD, the US is 15<sup>th</sup> among the 30 member nations in broadband penetration, lagging behind the acknowledged world leaders, the Netherlands and South Korea, but also Canada and all of Scandinavia.<sup>12</sup> The ITU, evaluating a larger number of countries than the OECD, places the US at 16<sup>th</sup>.<sup>13</sup> A separate ITU study measuring a variety of factors in the Digital Opportunity Index, places the US at 21<sup>st</sup>.<sup>14</sup> This is a particularly valuable analysis because it explores eleven different variables of technology development to assess each country in the study including the proportion of households with telephones, mobile telephones, computers, and Internet access; the rates of connectivity to the communications infrastructure; and the cost of connectivity relative to per capita income. Notably, the US dropped from 8th place in the Digital Opportunity Index in 2000 to 21st place by 2005. We are ranked 36th relative to other nations in the increase in the absolute value of our Digital Opportunity Index score between 2000 and 2005.

It is critical to recognize that our evaluation of the health of the broadband market must not end with a calculation of the available services, platform market share, and subscribership. There are three key metrics for understanding the broadband problem: availability, speed, and value (cost per unit of speed). In crafting a national broadband policy, we must recognize that true marketplace competition is the touchstone that yields marked improvements in all three metrics. Though the sizeable service gaps that leave rural America without a viable broadband connection are a huge problem, this is likely the easiest issue to resolve. Far more challenging are the starkly unfavorable comparisons in speed and value which separate us from the world leaders in broadband. These data-points suggest that we have a long way to go to catch up with the rest of the world, even if we manage to reach the goal of universal availability.<sup>15</sup>

- According to Takashi Ebihara, senior director of the corporate strategy department at NTT East Corp, Americans pay 7 times as much on a cost-per-megabit basis for bandwidth compared to the Japanese—\$.70 versus \$4.90.<sup>16</sup>

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<sup>11</sup> *Ibid.*

<sup>12</sup> Organization for Economic Cooperation and Development (OECD), "OECD Broadband Statistics to December 2006," <http://www.oecd.org/sti/ict/broadband>.

<sup>13</sup> [http://www.itu.int/ITU-D/ict/statistics/at\\_glance/top20\\_broad\\_2005.html](http://www.itu.int/ITU-D/ict/statistics/at_glance/top20_broad_2005.html)

<sup>14</sup> World Information Society Report, August 2006, <http://www.itu.int/osg/spu/publications/worldinformationsociety/2006/wisr-web.pdf>

<sup>15</sup> For a detailed background on product availability in Europe, see: Ofcom, The International Communications Market 2006, <http://www.ofcom.org.uk/research/cm/cm06/main.pdf>

<sup>16</sup> Grant Gross, "U.S. customers pay considerably more than the Japanese for bandwidth," IDG, 4 April 2007, [http://www.infoworld.com/archives/emailPrint.jsp?R=printThis&A=/article/07/04/04/HNjapbroadband\\_1.html](http://www.infoworld.com/archives/emailPrint.jsp?R=printThis&A=/article/07/04/04/HNjapbroadband_1.html)

- According to the OECD, Subscribers in Japan, Sweden, Korea, Finland and France pay the least per Megabit per second (Mbps) of connectivity
  - Japan: \$0.22
  - Sweden: \$0.35
  - South Korea: \$0.42
  - Finland: \$0.59
  - France: \$0.82
- In the U.S. a 3 Mbps DSL line retails for about \$30, or \$10 per Mbps, while a 6 Mbps cable line sells for about \$45, or \$7.50 per Mbps.
- A 50 mbps connection in Japan costs \$30 per month. Such speeds are not even available in the US. American customers can expect to pay \$20-30 per month for (at best) 3 mbps of DSL connectivity or between \$40-50 per month for 4-8 mbps of cable modem connectivity. Not only do American consumers settle for less, we often pay more for it.<sup>17</sup>
- A French company offers the “triple play”—50 mbps of symmetrical broadband service, unlimited telephony and cable television—for 30 euros per months. Neither this level of service nor this price point is available in the US by a wide margin.<sup>18</sup>
- The proportion of slow connections is on the rise. In December 2005, 15% of broadband lines had upload speeds slower than 200kbps. By June 2006 this had increased to 22% of lines. The proportion of DSL lines that had upload speeds slower than 200kbps increased over the 12/06-6/06 time period from 18.4% and 18.9%.<sup>19</sup>
- Over half of all broadband connections in the U.S. are slower than 2.5Mbps.<sup>20</sup>
- Prices aren’t dropping. Pew data<sup>21</sup> showed a year-to-year increase for cable, and a slight decrease for DSL -- but the bulk of that is due to low-intro slow-speed teaser rates. Yes, broadband speeds are slowly increasing, but we would expect a competitive broadband market to yield BOTH quality increases and price cuts.

The consequences of lagging performance are severe. Thomas Bleha, in his widely read 2005 article describes the situation so aptly it is worth quoting at length:

In 2001, Robert Crandall, an economist at the Brookings Institution, and Charles Jackson, a telecommunications consultant, estimated that "widespread" adoption of basic broadband in the United States could add \$500 billion to the U.S. economy and produce 1.2 million new jobs. But Washington never promoted such a policy. Last year, another Brookings economist, Charles Ferguson, argued that perhaps as much as \$1 trillion might be lost over the next decade due to present constraints on broadband development. These losses, moreover, are only the economic costs

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<sup>17</sup> *Ibid.*

<sup>18</sup> “Neuf Offers 50 Mbps in Paris for 30 EUR per month,” *MuniWireless*, 7 March 2007, <http://www.muniwireless.com/article/articleview/5771/1/2/>

<sup>19</sup> “High-Speed Services for Internet Access as of June 30, 2006,” Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission.

<sup>20</sup> *Ibid.*

<sup>21</sup> John B. Horrigan, “Home Broadband Adoption 2006,” Pew Internet & American Life Project, May 28, 2006.

of the United States' indirection. They do not take into account the work that could have been done through telecommuting, the medical care or interactive long-distance education that might have been provided in remote areas, and unexploited entertainment possibilities.

The large broadband-user markets of Northeast Asia will attract the innovation the United States once enjoyed. Asians will have the first crack at developing the new commercial applications, products, services, and content of the high-speed-broadband era. Although many large U.S. firms, such as Cisco, IBM, and Microsoft, are closely following developments overseas and are unlikely to be left behind, the United States' medium-sized and smaller firms, which tend to foster the most innovation, may well be.

The Japanese and the South Koreans will also be the first to enjoy the quality-of-life benefits that the high-speed-broadband era will bring. These will include not only Internet telephones and videophones, but also easy teleconferencing, practical telecommuting, remote diagnosis and medical services, interactive distance education, rich multimedia entertainment, digitally controlled home appliances, and much more.<sup>22</sup>

### *The Elusive Third Pipe – Why Wireless Won't Save Us*

To the extent that US broadband policy has been guided by any logic, it is the argument that intermodal or cross-platform competition will be the savior of national broadband performance in the marketplace. While much of the rest of the world has opened up vigorous competition *within* platforms, we have staked our broadband future on competition *between* platforms. So far, it has not worked out—the US broadband market has long been a rigid duopoly that shows few signs of weakening.

The lack of price competition between DSL and cable modem is apparent in the marketplace. Cable operators have made no attempt to match DSL on price. Comcast CEO Brian Roberts poured cold water on the idea that he is concerned about introductory price cuts in DSL. “We continue to believe and continue to charge for our services a rate that we think is a great value because the product is so much better. When Hyundai cuts their prices, BMW isn't exactly upset about it.”<sup>23</sup> Though they have picked off consumers who want higher speeds, they primarily rely on bundled services to hold customers. The DSL operators have aimed their marketing strategy at transitioning dial-up customers with introductory rates to low-end DSL. However, this practice is ebbing. Recent industry analysis shows that introductory DSL prices are rising; so are prices for bundled services. According to a recent press report, Banc of America analyst David W. Barden noted that “a duopoly is emerging where cable and phone companies can avoid provoking price cuts in their core services. Carriers, for instance, can discount DSL service while keeping prices up on phone service, and cable firms can drop prices for phone service but maintain higher pay-TV rates.”<sup>24</sup>

The broadband problem in the US flows from a simple policy mistake – a decision to rely upon a duopoly of telephone and cable companies to decide where and when to deploy this vital

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<sup>22</sup> Thomas Bleha. “Down to the Wire.” *Foreign Affairs*, May/June 2005.

<http://www.foreignaffairs.org/20050501faessay84311/thomas-bleha/down-to-the-wire.html>

<sup>23</sup> See: <http://www.dslreports.com/shownews/65917>

<sup>24</sup> See: James S. Granelli, “Prices going up for phones, Net,” 1 Feb 2007, *Baltimore Sun*,

<http://www.baltimoresun.com/business/bal-bz.pricing01feb01,0,1370518.story?coll=bal-business-headlines>

infrastructure with no overarching social responsibilities whatsoever. They have slow rolled deployment, kept prices far above those in other nations, and emphasized bundles of services targeted to upper income Americans built around “franchise” services. The results is restricted availability and a network that is intended to maximize short run profits, not the long run national interests of social welfare.

Though some might maintain that duopoly competition is sufficient, it is the expectation of a third pipe competitor that has propped up the logic of relying on intermodal competition to reach our policy goals. The steady promise in hearings such as this one over the last year or two has been that a viable wireless competitor is right around the corner. This hypothetical wireless competitor will throw open the gates of competition, unleash market forces, and the genius of the invisible hand will drive down prices, increase innovation, and turn the US back onto the path toward regaining global leadership in broadband technology. Some commentators claim that the wireless competitor has already arrived in the form of 3G mobile cellular broadband. For example, Steve Largent, the President and CEO of CTIA made this comment before this Committee in May of 2006: “As we enter our third decade, the wireless industry is poised to enter a Wireless Renaissance, bringing advanced services like wireless Internet, to more than 200 million mobile Americans.”<sup>25</sup> Recent data from the FCC seem to support this point of view. 60% of the increase in broadband connections over the past 6 months is due to mobile cellular wireless connections.<sup>26</sup>

But these promising statistics are only promising because they are misleading. The FCC counts a broadband capable PDA subscriber exactly the same as a residential DSL or cable modem subscriber when counting broadband connections. The problem is that the wireless and wireline broadband products are in completely different product markets. They are not comparable in either performance or price; they are not substitutable services; and they are certainly not direct competitors. Though no precise data exists, it seems obvious that the overwhelming majority of subscribers to mobile broadband devices have not cancelled their wireline broadband service as a result. The wireless product is a complementary product for which the consumer pays extra. Most consumers do not use mobile wireless broadband on cell phones for the same purposes as a residential broadband connection. Consider these facts:

- These new mobile broadband lines are for the most part mobile devices with a data service capable of accessing the Internet at >200kbps speeds. They are highly unlikely to be used as a primary home broadband connection. In fact, 89.5% of mobile wireless connections are business subscribers, not residential subscribers.<sup>27</sup>
- In total, 17% of all broadband lines counted by the FCC are now mobile wireless. But only 3.8% of advanced service lines are mobile wireless (>200kbps in both directions), and only 2.5% of residential advanced service lines are mobile wireless.<sup>28</sup> What's more, the three largest mobile data carriers are AT&T, Verizon and Sprint. Two of these three carriers are also ILECs, and are the number one (AT&T) and number three (Verizon) most subscribed to broadband Internet

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<sup>25</sup> Testimony before the US Senate Committee on Commerce, Science and Transportation, S. 2686, Communications, Consumer's Choice, and Broadband Deployment Act of 2006, May 18, 2006.

<sup>26</sup> “High-Speed Services for Internet Access as of June 30, 2006,” Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission.

<sup>27</sup> *Ibid.*

<sup>28</sup> *Ibid.*

service providers, and are the top 2 DSL providers in the United States.<sup>29</sup> Sprint's joint venture with cable operators also diminishes any potential role it could play as a third pipe.

- It is important to note that the multi-functionality of cellular phones with broadband data components may contribute to an overstating of the true level of mobile broadband use. A provider of a DSL line only reports to the FCC the lines that are actively subscribed to (and presumably used). However, if a cellular customer's mobile device is capable of data transfers at >200 kbps, then they are counted as a broadband line, even if the customer rarely uses the device for non-voice purposes.
- Cellular broadband connections are duplicate connections -- that is, very few people subscribe to and use a mobile broadband connection as their home broadband connection. Furthermore, mobile wireless connections are not substitutes for cable or DSL connections. These connections are slow, have strict bandwidth caps, and other restrictions, such as users not being allowed to use the connection for VoIP applications (Internet phone) and numerous other Internet-based functionalities.<sup>30</sup>

Appendix A gives the exact specifications of price, speed, and bandwidth limits of mobile wireless broadband products from the major carriers—AT&T, Verizon and Sprint. These services, while valued by consumers, are not competitors to wireline broadband service. They have not brought the competition necessary to drive down prices and drive up speeds in the overall broadband market. It would be unwise to bet that they will. Vertically integrated carriers that dominate the wireline broadband market are highly unlikely to offer a wireless broadband product that can potentially cannibalize their wireline marketshare. It is far better business to offer a complementary service.

If 3G mobile broadband won't bring us competition, surely the auction of the 700 MHz band will do so, right? Will 4G finally bring us the third pipe in this "Wireless Renaissance"? Not likely. The DTV transition has long been touted as the moment when wireless broadband will come into its own. A senior executive at Motorola made these comments in July of 2005: "The spectrum that will be made available at 700 MHz as a result of the transition to digital television provides a unique opportunity to provide facilities-based competitive broadband services."<sup>31</sup> His comments are typical of the hopes many have expressed to this Committee. The frequencies vacated by the broadcasters in 2009 are up for auction early next year, and this "beachfront spectrum" is thought by many to be the answer to our broadband competition woes.

To be sure, the 700 MHz auction could be the last, best chance to bring a third pipe to the market. It has been hailed as such by legislators, regulators, and industry leaders alike. Yet the favorites to win this auction (the major cellular carriers) really do not intend to deliver the third pipe. Further there are technical limitations that come with the proposed structure of the auction that would make it very difficult for any licensee to produce the desired outcome. It is quite a striking disconnect. All of the rhetoric about this auction promises the inauguration of the elusive third pipe in wireless broadband. But none of the facts of what the FCC is doing will realize those lofty goals.

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<sup>29</sup> Leichtman Research Group, May 2006.

<sup>30</sup> See: Tim Wu, "Wireless Net Neutrality," New America Foundation, February 2007, [http://www.newamerica.net/publications/policy/wireless\\_net\\_neutrality](http://www.newamerica.net/publications/policy/wireless_net_neutrality)

<sup>31</sup> Michael D. Kennedy, Senior Vice President, Motorola, Before the United States Senate Committee on Commerce, Science, & Transportation, July 12, 2005.

Why is there such a divide between the rhetoric of 700 MHz as the promised land of the third pipe and the reality of the auction?

First, there is nothing that says the winning bidders must use the frequencies to offer wireless broadband services that are true competitors to DSL and cable. Looking at the likely winners of the auction, it is clear that a competitive market is the last thing on their minds. The incumbent carriers are thought by most odds-makers to be the most likely winners in this auction—just as they were in the last spectrum auction for Advanced Wireless Services frequencies. These companies are the nation's leading providers of DSL service. Why would they use the 700 MHz licenses to offer a wireless broadband service that cannibalizes their own market share in DSL? The answer is they would not—not here anymore than they have in 3G cellular broadband. They are far more likely to use this spectrum to offer new services which consumers will buy on top of their existing wireline voice service, wireline broadband service, and wireless voice service. This new service, 4G wireless, will be an enhanced mobile data service capable of delivering limited amounts of video and audio to a handheld device. This is not an unwelcome product, of course, but it will not solve the broadband problem; it will not bring a “third pipe”; and it will not bridge the digital divide to poor and rural communities.

Second, most of the other bidders in the pool will be looking to grab spectrum to fill out the geographic coverage area of their existing cellular networks. This will also allow them to compete, to some degree, with AT&T and Verizon Wireless, the industry leaders. This is not an unwelcome development either, but by itself, it will not solve our broadband problem.

Third, none of the spectrum blocks up for auction are large enough to provide a true alternative to DSL and cable modem no matter the intentions of the bidders. The largest block up for auction is 10 MHz. That translates into about 15 mbps of capacity spread over a cell sector. Depending on the density of users in that sector, the actual throughput performance experienced by a customer will struggle to exceed 2 mbps on the download, and probably will be less.<sup>32</sup> That's not bad today, but down the line as DSL and cable providers eventually increase speeds to 5-10 mbps of throughput for each user, that wireless service will not be a true competitor. It will be a reasonable broadband experience for a wireless device used for limited applications, but it will not be a substitute for a residential wireline connection. To have that, we would have to allocate at least 30 MHz to the task.

Fourth, at present, none of the spectrum blocks up for auction are conditioned on “open access” rules—though we have filed comments at the FCC asking for this and other proposals to maximize the utility of the auction.<sup>33</sup> Why are these important? Essentially, this is the only way to make a spectrum allocation into a truly competitive market for connectivity to the Internet, software applications, and devices that attach to the network. Open access simply means that the licensee sells access to the network on a wholesale basis at commercial rates. Any number of ISPs that choose may come and buy bandwidth and compete for customers. Everyone shares the same transmitter and connectivity; they compete on customer service and price. These networks are

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<sup>32</sup> This estimate of bit rates (roughly 1.5 bits per hertz) in the 700 MHz band was provided by an engineer responsible for one of the entities preparing to bid for a 700 MHz license. It was confirmed independently by two other wireless engineers as a reasonable estimate given the frequency, power levels and modulation schemes available today.

<sup>33</sup> Consumers Federation of America, et. al., "Ex Parte Comments of the Ad Hoc Public Interest Spectrum Coalition," PS Docket No. 06-229, WT Docket No. 06-150, 05-211, 96-86, April 5, 2007, Available at <http://www.freepress.net/docs/pisc700mhzpart2.pdf>

neutral in two important respects. First, bandwidth on this network is available to any ISP on nondiscriminatory terms. Everyone pays the same rates for the same wholesale products to compete fairly in the market. Second, the network is neutral towards the devices and applications running on the network. Provided they do not harm the network, any innovative piece of software or hardware a company can dream up may connect to the network and sell to consumers. In turn, the broadband network provider is fully compensated for use of its network. This is the ultimate free market.

Such a system of intramodal competition in the 700 MHz band using blocks of spectrum large enough to compete with wireline products is the only chance to realize the impact of the elusive third pipe. Few observers are optimistic enough to believe the FCC intends to go in this direction. If Congress is interested in preventing a serious disappointment and the loss of a golden opportunity to deliver broadband competition, intervention in this auction process is imperative.

### **Myths, Excuses, and the Deplorable State of Broadband Data Collection**

A former, senior FCC official once quipped: “you can’t manage what you don’t measure.” By that standard, the FCC hasn’t been managing much of anything effectively in the broadband market. For years now, analysts have been pointing out the poverty of the data collection regime used by the Commission.<sup>34</sup> The GAO did a study pointing out the embarrassing flaws in the FCC’s methodology, showing that FCC overstated broadband provider availability by 400% in some instances.<sup>35</sup> Finally, the FCC seems to be getting the message. They have opened a Notice of Proposed Rule Making into the matter.<sup>36</sup> Until such time as the Commission issues new rules, however, we are still suffering with a set of long standing problems:

- The FCC still uses an absurd standard of broadband, 200kbps. This was barely fast enough to have a tolerable Internet experience in 1999, but in 2007 it is too low to enjoy streaming video, flash animation, and other features common to today's Internet applications.<sup>37</sup>
- The FCC still uses the highly discredited metric of broadband availability, the ZIP code system that the GAO has criticized as vastly overstating the level of availability and competition within the broadband market.<sup>38</sup>
- Though there is a steady increase in number of providers in ZIP codes, the GAO report shows these numbers are inflated over 400%.<sup>39</sup>
- The GAO put the median number of providers available to an individual family at 2, and determined that at 1 out of every 10 households had no access whatsoever.<sup>40</sup>

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<sup>34</sup> Turner, op. cit.

<sup>35</sup> GAO, op. cit.

<sup>36</sup> Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscriber Data, and Development of Data on Interconnected Voice over Internet Protocol (VoIP) Subscriber Data, Notice of Proposed Rule Making, WC Docket No. 07-38, April 16, 2007, Available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-07-17A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-07-17A1.pdf)

<sup>37</sup> Turner, op. cit.

<sup>38</sup> GAO, op. cit.

<sup>39</sup> *Ibid.*

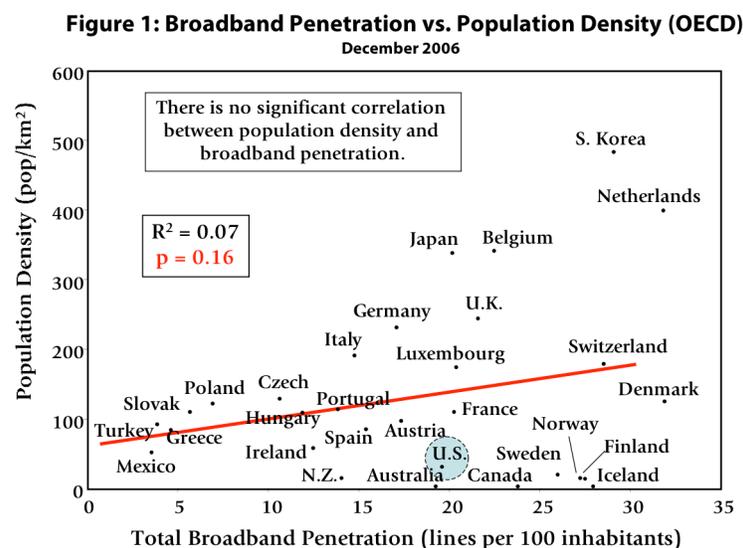
<sup>40</sup> *Ibid.*

- The ZIP code method misses micro gaps in service availability. If the data were collected at ZIP+4, we would see that service availability varies from block to block in many areas.
- The FCC measures only 1 of the 3 major indicators of broadband performance: availability. Price and speed data, critical to understanding how to make good policy, are simply unavailable.
- The FCC erroneously treats wireless broadband service as a complete substitute for wireline broadband service, rather than as a more expensive and feature-poor supplement.

Associate Director John Horrigan at Pew Internet noted that a key problem with the study of the US broadband market “is the fact that there's not good data in the U.S. on connection speed. Yes, people are adopting broadband at a good clip in the U.S., but we don't know how fast their connections are. The FCC has no good data on network speed, and that's not a question that you can reliably get by doing a telephone survey.”<sup>41</sup>

Another serious problem with the debate over the health of our broadband market has been the red-herring of population density. Apologists for the poor U.S. broadband numbers are quick to attribute the low penetration level to this country’s relatively low population density. FCC Chairman Kevin Martin authored a piece in the *Financial Times* stating: “Given the geographic and demographic diversity of our nation, the U.S. is doing exceptionally well. Comparing some of the ‘leading’ countries with areas of the U.S. that have comparable population density, we see similar penetration rates.”<sup>42</sup>

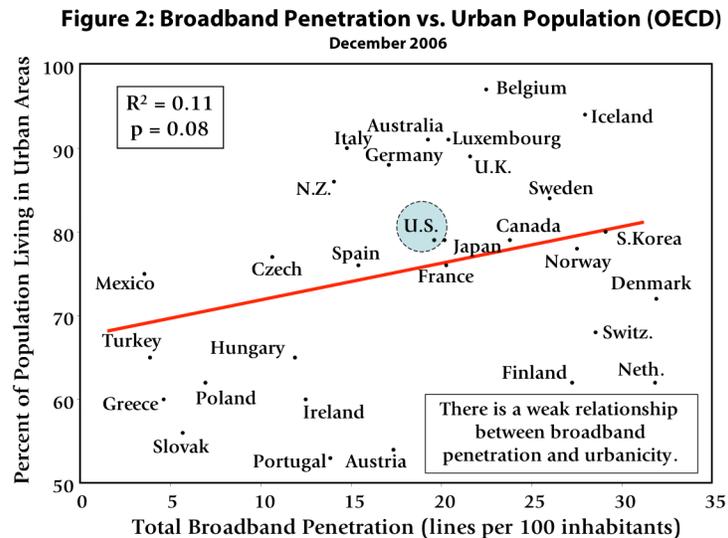
Martin blamed U.S. geography for our poor broadband performance, but the facts tell a different story. For the 30 nations of the OECD, population density is not significantly correlated with broadband penetration. Indeed, one of the world’s leading broadband nations, Iceland, has one of the lowest population densities in the world. Furthermore, 5 of the 14 countries ahead of the U.S. in the OECD broadband rankings have lower population densities than the U.S.



<sup>41</sup> Quoted in: Richard Hoffman. “When It Comes To Broadband, U.S. Plays Follow The Leader,” *InformationWeek*, 15 Feb 2007, <http://www.informationweek.com/story/showArticle.jhtml?articleID=197006038>

<sup>42</sup> Kevin Martin, “Why Every American Should Have Broadband Access,” *Financial Times*, April 2, 2006.

While there may be a theoretical reason to think that population density should be correlated with broadband penetration, in real world measurements comparing performance at the national level that is not the case. What Martin is likely trying to convey is the phenomenon of “economies of density.” In theory, it should be less costly on a per-line basis to deploy broadband to an area that is highly populated than one that is sparsely populated — all other things being equal. But population density is not the relevant metric to capture this phenomenon — as people tend to cluster in cities, regardless of the overall geographical area of a particular country. The relevant metric is “urbanicity,” or the percentage of a nation’s population living in urban areas or clusters.



When the relationship between urbanicity and broadband penetration is examined, there’s only a very weak, statistically insignificant correlation. Countries like the Netherlands and Switzerland have lower percentages of their population living in urban areas than the United States yet have higher broadband penetration rates. Similarly, countries like New Zealand and Germany have higher percentages of urban population than the United States but lower broadband penetration levels. In total, 8 of 14 countries ahead of the U.S. in the OECD broadband rankings have lower percentages of their population living in urban areas.

In short, geographic factors alone cannot explain why the United States lags behind. Factors like income, income distribution, public policy, and market competition play a far bigger role.

## **Part II: Fixing the Broadband Problem**

The first step is establishing a serious national broadband policy. Currently, we are “the only industrialized state without an explicit national policy for promoting broadband.”<sup>43</sup> In response to a recent request to compare Japanese and American broadband policy, a Japanese telecom executive noted: “I don’t think at the moment, the United States has any national policy. The idea is, let the market do it.”<sup>44</sup> The key problem is that US broadband policies have not even engaged the free

<sup>43</sup> Thomas Bleha. “Down to the Wire.” *Foreign Affairs*, May/June 2005.  
<http://www.foreignaffairs.org/20050501faessay84311/thomas-bleha/down-to-the-wire.html>

<sup>44</sup> Gross, op. cit.

market, choosing instead to wait for the elusive intermodal competition to come along and challenge the stagnant duopoly of DSL and cable. It is in this void that we must reassert the commitment to a ubiquitous, affordable 21<sup>st</sup> century communications network for all Americans. The framework of public-private partnership in policy-making that characterized the technology boom of the 1990s worked because public policy guided the thrust of development. As Thomas Bleha describes it: “The private sector did the work, but the government offered a clear vision and strong leadership that created a competitive playing field for early broadband providers.”<sup>45</sup> When we talk about public private partnerships, we do not mean situations in which the private sector profits at the expense of the public; we mean partnerships that serve the public interest, which is difficult when public policy is not clearly articulated.

The national broadband policy should be designed around aspirations to particular social and economic outcomes, not the business models of the incumbent telecommunications carriers. We need to identify our goals and work backward to find the right policies. We suggest goals that address our shortfalls in each of the three major indices of broadband performance: availability, price, and value (cost per unit of speed).

Goal #1 – Establishing universal availability of broadband services

Goal #2 – Bringing competitive, affordable services and programs to stimulate adoption in under-subscribed areas

Goal #3 – Enhancing the speed, coverage, and reliability of communications networks to spawn the next generation applications that will raise the social and economic value of connectivity

What would success look like? To regain global leadership in broadband and maximize the social benefits of a network economy, we need to establish a framework that supports an evolving communications infrastructure that will ultimately provide 100 megabits of symmetrical connectivity to every home in America in the next decade. From the passage of the Communications Act in 1934 to the Telecommunications Act in 1996, the American telephone network evolved through rapid technological change and an immense expansion of service and services. It was an infrastructure built with private capital subject to public obligations and oversight. We must certainly adapt to the more dynamic world of today, but we are suffering because we have abandoned the key role of public policy.

To achieve the goal, we will need vigorous, multi-modal competition—that is, competition between delivery platforms (e.g. DSL, cable, and wireless) as well as competition within delivery platforms. We cannot and should not bet our digital future on one form of competition. We should ensure that the content/applications market that sits adjacent to the connectivity/access market also retains maximum competitiveness, as it always has, by precluding market power in network ownership from distorting the market for Internet content. This will maximize innovation in the content market and increase the likelihood that the next “killer application” will attract more and more Americans to subscribe to a network. Indeed, this virtuous cycle of greater demand for advanced applications leading to greater uptake of broadband, leading again to greater demand for advanced applications, seems to be completely missing in the FCC’s thinking. We should also invest in social programs that bring the equipment and training needed to help disadvantaged communities into a place where it

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<sup>45</sup> Bleha, *op. cit.*

makes sense to connect. So-called digital inclusion programs are often overlooked in the consideration of the broadband future.

To realize these goals, we will need to establish a national broadband policy framework that is comprehensive and aggressive in pursuit of market competition and advanced network capabilities. Not all of these changes will be supported by the incumbent industries. But it is essential that we recognize that the short-term financial interests of dominant firms must not be permitted to overshadow the larger national interest in charting a successful path for our digital future.

Where should we start?

### *Study the Problem - Improve Data Collection*

We should begin by addressing our data problems. We should conduct a broad inquiry into costs, feasibility, technologies, and deployment strategies that can be initiated through creative policymaking. To do this effectively, we needed better data. We need to know at a granular level—block by block—where broadband service is available and where it is not. But we must go beyond that. We must collect information about the price and speed of connections as well. We need to know about service agreements as well—early termination fees in long term contracts and other switching costs may distort our understanding of the real levels of competition in the market. Without this information, we cannot quickly identify the gaps in the service market and remedy market failures that hold prices high and service quality low.

Programs like Connect Kentucky represent a valuable model to consider for federal policy—particularly in its focus on working with local communities. But the Federal Communications Commission must also play its role of central administrator—collecting and evaluating the massive amounts of information we could be using to make broadband policy. Simple changes in the Section 706 requirements for telecommunications carrier reporting would dramatically clarify the picture of what is happening in our broadband market.

We should also set to work studying the cost and feasibility of broadband technologies. For many years, it has been the stated goal of the US government to make broadband connections universal. Yet we do not have reliable cost estimates for realizing that goal, much less have we compared the costs of deploying different technologies to accomplish the task. For years, we have heard that technologies like broadband over power lines and satellite wireless broadband were inches from transforming the marketplace. Yet we did not study these issues sufficiently to determine that those estimates were overblown and unrealistic. A paucity of information has led us to false expectations and delay, distracting from the need to seek out the necessary data points to make policy.

Beyond the collection of market data, we should look to empower the research community (both government and university led) to study the Internet. It is hard to believe, but not a single data link on the privately-owned Internet backbone today is available for study by researchers. Our understanding of the flow of traffic over the network is very limited as a result. Using the proper safeguards to guarantee privacy and protect proprietary commercial information, we should empower the research community to study the problems of the Internet that inhibit our progress, including security issues, spam, routing tables, peering, packet loss, latency, jitter, and a wide variety of topics that could benefit from the application of scientific scrutiny. We should put the country's greatest minds to work on these problems to assist our network owners. This collaborative model

of research and production has always been the basis of technological leaps in the Internet space. At present, the only government programs looking into these matters are not driven by competition policy, but rather by national security. The Department of Homeland Security's PREDICT program offers a useful model for this Committee to explore.<sup>46</sup>

Possessing data about our own broadband market will be an enormous advantage, but we should look beyond our borders. We should look at the nations that have surpassed us in the creation of competitive broadband networks to learn which strategies have proven successful and why. There has been no serious effort to do this to date. Yet the research is being done in our universities. Two recent studies have compared the policies that have shaped the US broadband market with those in Europe and South Korea. In both cases, the findings show that the root cause of our problems is based in a lack of competition policy.<sup>47</sup>

It is worth dwelling on this point. The policy that scholarship indicates is the MOST responsible for success in the international broadband market—open access to network infrastructure for intramodal competitors—is precisely the policy that the US has abandoned. Ironically, this policy was originally initiated in the FCC's own Computer Inquiry decisions of the 1970s and 1980s, which allowed Internet service providers to purchase underlying telecom inputs on a nondiscriminatory basis. Many believe this ISP "open access" policy, along with the Carterphone principles of the 1960s, helped pave the way for the rise and enormous success of the Internet. Later, the Telecommunications Act of 1996 briefly opened up the local network so that competing carriers could use the local loop to provide DSL and other advanced data functionalities. Unfortunately, in both cases these pro-competitive precedents were eviscerated in subsequent legal and regulatory disputes, essentially because they were not in the short term financial interests of incumbents. Asia and Europe adopted and embraced open access—betting on the long-term benefits of the policy—and they have used it to leap-frog the US in the race for global broadband supremacy. Professor Amit Schejter's ground-breaking analysis of this dichotomy is laid out in a working paper attached to this testimony.

A similar analysis comparing US and South Korean broadband policy also highlights the divergent paths on open access rules that have led to higher and lower barriers to entry (respectively) in the broadband market. The study concludes:

The sluggish progress of intermodal and intramodal market competition explains a part of the sluggish demand in the residential high speed Internet access market in the U.S., while the South Korean market was able to grow rapidly due to fierce competition in the market, mostly facilitated by the Korean government's open access rule and policy choices more favorable to new entrants rather than to the incumbents. Furthermore, near monopoly control of the residential communications infrastructure by cable operators and telephone companies manifests itself as relatively high pricing and lower quality in the U.S. The more favorable terms from which the dominant providers have

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<sup>46</sup> See: <https://www.predict.org/>

<sup>47</sup> See Richard Taylor and Eun-A Park, "Barriers to Entry Analysis of Broadband Multiple Platforms, Comparing the US to South Korea," Paper presented to the Telecommunications Policy Research Conference, September 29 – October 1, 2006, Washington DC, <http://web.si.umich.edu/tprc/papers/2006/636/TPRC2006BarriersToEntry.pdf>; Amit Schejter, "From all my teachers I have grown wise, and from my students more than anyone else: What Lessons Can the US Learn from Broadband Policies in Europe?" Working Paper, 2007, Pennsylvania State University.

benefited, and government's deregulation, may limit business opportunities for other Internet service providers.<sup>48</sup>

Japan's NTT East continues to make heavy investments in fiber-optics despite requirements that it must share its network with competitors. When asked to explain why, an NTT executive cited the long term benefit to the country. "We see the future, and then we do what we feel is right," he said.<sup>49</sup> As a result of this vision, Japan (like many of the world's leading broadband nation) has multiple wireline competitors offering broadband in each market. In the United Kingdom, BT has agreed to a split between its retail and wholesale operations, which has both created intramodal competition over BT's local loops and led to greater overall investment in broadband facilities. The evidence is clear: the results of broader consumer choice are lower prices, higher speeds, and greater innovation.

Professor Schejter points out that the US may be well served to learn from the European and Asian examples: "Observing international broadband adoption trends and rates, one cannot fail to notice that while Europe is plunging ahead, with some countries leaving even Asian powerhouses behind, the United States, which was the original leader in both making the first regulatory moves and adopting Internet technology, is slowly falling behind. What is it then that makes Europe different than the United States, and what can the United States learn from the European experience in order to revive broadband penetration?"<sup>50</sup>

### *Enact Multi-Modal Competition Policy*

The vision for our national broadband policy should be bold, aspirational, and comprehensive. The problems in the marketplace will not be solved by tweaking around the edges; nor will they be solved by enacting policies that are functionally subsidies of status-quo, incumbent business-models. We need to reject the conventional political wisdom of complacent incrementalism and embrace a policy inquiry into all the possible options for putting our broadband future back on track. Now is not the time to make artificial declarations that some ideas are off the table and narrowly focus on particular proposals. No one policy idea is the silver bullet. It will require many different initiatives aimed at different levels of the broadband market to accomplish our goals. In short, it must be "multi-modal"—by which we mean that it must foster competition both *within* and *between* broadband technology markets.

A useful way to categorize policy proposals is to group them according to the network layer to which they apply. To simplify for present purposes, the broadband market can be understood as two separate arenas: 1) a physical connection to the Internet and the technologies used to transmit information over the network; and 2) the applications and content delivered via that Internet connection and the devices used to receive them. We can and should target broadband policy in both layers of the network to maximize the productivity of both markets. This policy has two broad components: engendering greater competition at the physical layer, and crafting protective safeguards for the application layer. Though each of these proposals deserves analysis and explanation, for the purposes of this testimony, we will simply list them out for discussion. This may serve as a consumer blueprint of ideas for a national broadband policy. We would encourage

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<sup>48</sup> Taylor and Park, op. cit.

<sup>49</sup> Gross, op. cit.

<sup>50</sup> Schejter, op. cit.

other stakeholders to offer the Committee similar, comprehensive proposals for consideration.

### Policies for the Physical Layer

The physical layer is not just wires and cables. It is any means of delivering a broadband connection and the baseline rules and consumer protections governing that delivery system. By extension, policies aimed at the physical layer include any effort to expand the reach, capacity, competitiveness or efficiency of these networks to serve residential and business customers. In turn these networks support the spread of advanced Internet applications that can be accessed and used by all Americans.

- Allocation of licensed public spectrum aimed at creating a viable wireless broadband competitor – We should approach policy opportunities like the auction of 700 MHz frequencies with the goal of bringing new entrants into the market that are independent of wireline incumbents.
- Expansion of unlicensed public spectrum – The greatest success of recent broadband policies is WiFi, or unlicensed spectrum. We should expand the availability of unlicensed spectrum into lower frequencies by opening up the unassigned television channels (also known as “white spaces”) for wireless broadband. We applaud this Committee for its work on this issue and recommend the Kerry-Smith bill for passage.
- Reform and transition the federal universal service programs from dial-tone to broadband – We should move our valuable USF programs into the 21<sup>st</sup> century with targeted subsidies and accountability benchmarks to support broadband deployment in high-cost areas.
- Reasonable and nondiscriminatory interconnection between facilities-based providers – Since the Internet is nothing more than a global network of interconnected private and public networks, it is imperative that each interconnects with one another to maximize the efficiency and utility of the overall network.
- Reintroduce intramodal competition into the broadband market – Though recent FCC decisions have moved away from this model of competition policy, it is imperative that it is not abolished. Intramodal competition through open access to network infrastructure has been the cornerstone of international broadband successes. We should embrace open access plans in the licensing of the 700 MHz band and establish policies to bring competition back in the wireline space.
- Explore financial incentives to expand broadband capacity in the last mile – Successful policies overseas have included direct government investment in wiring public facilities, low-interest loans for public and private broadband projects, tax incentives for networking equipment, accelerated depreciation, debt guarantees and other targeted investments in our digital future.<sup>51</sup>
- Authorize and protect the right of local governments to provide broadband services – Municipalities have led the charge in recent years to fill gaps in the broadband market and build services that exceed those offered by commercial incumbents. This effort to bring competition

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<sup>51</sup> Gross, op. cit.

and innovation to the marketplace should be encouraged. We applaud the work of the Committee on this issue and recommend a bill offered by Senators Lautenberg and McCain.

- Collect data and map the broadband market on an ongoing basis – We cannot solve problems that we do not understand. Our current state of broadband data collection is unacceptable. FCC should be instructed to collect more granular information on service as well as price and speed data on all broadband connections. Programs should be initiated to help map the broadband market.
- Require network owners to offer customers stand-alone or “naked” DSL or cable modem service – The promise of VoIP competition in the voice market has been stymied by the bundling practices of the incumbent operators. To give this alternative a viable chance, policy-makers should put in place protections for this consumer benefit.

### Policies for the Applications Layer

The applications layer, in this analysis, refers to the marketplace for content, applications, services and devices that flow over, or connect to, the Internet. This economic space at the “edge” of the network architecture has been a remarkable engine of economic growth in the last decade. In addition, this is the space where network technologies meet democratic discourse and open cultural expression. Because of the open marketplace at the edge of the network, an open sphere for public speech has developed that rivals the printing press as the most important development in modern political communication. Policies aimed at the application layer should recognize its centrality to the economic and democratic health of the nation.

- Network Neutrality should be established as the cornerstone of broadband policy – We should protect an open market for speech and commerce on the Internet for consumers, citizens and businesses alike. To do this, we should apply nondiscrimination safeguards to the broadband ramps leading onto the Internet that prohibit owners of the physical layer of the network from gate-keeping the applications layer of the network.
- *Carterphone* rules should apply to the wireless broadband platform – We should recognize and remedy the contradictions in fostering an open market for wireless broadband on a platform emerging from the closed networks of cellular telephony. The walled garden of the PCS world should not be permitted to cripple the potential of mobile wireless broadband. All devices, applications and services that do not harm the network should be permitted access.
- Pair broadband expansion with digital inclusion programs – Bringing broadband to underserved areas will do no good if local communities lack the computers and training necessary to access the network. We should design and empower social programs to bring technology and skills to communities and work with local leaders to establish meaningful connections.
- Facilitate ongoing research into network traffic and data management – The dearth of information about what is happening on the Internet cripples our efforts to address some of the most pressing problems in the application layer: spam, cyber-security, privacy, and traffic management. Policymakers should seek to make available the tools researchers need to provide the best available answers to these problems.

## Conclusion

The status quo is unacceptable. If we watch and wait, trusting that today's artificially-constrained marketplace will magically solve the broadband problem, we will see the US slip farther behind the rest of the world and widen the digital divide—both domestically and internationally. The consequences are too severe to tolerate this narrow path.

The current trend lines are clear. We continue to have large gaps in broadband service across the nation. Worse still, the networks we do have are slower, more expensive, and less competitive than the global leaders in broadband performance. Our reliance on intermodal competition has not proven successful, as we remain mired in a rigid duopoly. The optimistic predictions about mobile cellular broadband do not appear to hold any real promise of a viable “third pipe.” Meanwhile, network operators are following the demands of quarterly returns—investing in networks where costs are lowest and profits highest and leaving the rest of the market behind. Perversely, the proposals of the incumbents include dismantling the open, neutral marketplace for commercial applications and political speech to squeeze out higher revenues. The result in the value chain and in the public sphere will be a resounding net loss. This is robbing Peter to pay Paul, and the Congress should reject and look beyond such a short sighted approach to real solutions. We must reject the argument that an open Internet and a high capacity network are mutually exclusive goals. We must have both for our information marketplace to prosper.

The first step on the road to broadband recovery is understanding the problem. We must rectify the deplorable state of data collection in the broadband market. What we do not know undercuts our ability to craft and target viable solutions. Second, we must shed the myths about our failures and the false promises that a magical resurrection of our fortunes is right around the corner. Third, we must study the successes of other nations to determine which policies are the best bets for the digital future of the US. Now is not the time to take ideas off the table, it is a moment for aspirational inquiry and bold vision.

Finally, the Congress should move forward with a comprehensive national broadband policy. This should be a broad platform of initiatives that addresses the complexity of the issue and maximizes our chances for near and long term success. The focus of these policies should be: 1) enhancing competition between and within the technologies that deliver broadband connectivity; 2) protecting competition and speech in the content flowing over the Internet; 3) expanding opportunities to bring new broadband providers to the market using new technologies; 4) using targeted economic incentives to stimulate investment in underserved areas; 5) establishing programs that couple broadband deployment with technology provision and training; and 6) promoting a permanent research agenda that facilitates the collection of data in the market and on the network.

Solving the broadband problem is a serious challenge of signal importance. We look forward to working with the Committee to find productive solutions.

## Appendix A – Sample Mobile Broadband Offers

Mobile broadband service programs are expensive, slow, not universally available, and severely restrictive. A sample of available offers:<sup>52</sup>

### Sprint

- In Rev A coverage areas (available to 100 million people)
  - Download Speed: 600-1400 kbps
  - Upload Speed: 350-500 kbps
  - Price: \$59.99 per month with a 2-year contract. OR \$79.99 per month with a 1-year contract.
    - \$36 activation fee
    - \$200 early termination fee.
    - Numerous taxes, surcharges, and fees
- In non-Rev A coverage areas (available to 94 million additional people)
  - Download Speed: 400-700 kbps
  - Upload Speed: 50-70 kbps
  - Price: Same as above
- Service restrictions:
  - “Use as a private line or frame relay service substitution, service, or like equivalent, is prohibited. Not available while roaming. Premium content not available. Shared data not available.”
  - “We reserve the right to limit or suspend any heavy, continuous data usage that adversely impacts our network performance or hinders access to our network. If your Services include unlimited web or data access, you also can’t use your Device as a modem for computers or other equipment, unless we identify the Service or Device you have selected as specifically intended for that purpose.”

### Verizon

- In Rev A coverage areas (available to 135 million people)
  - Download Speed: 600-1400 kbps
  - Upload Speed: 350-500 kbps
  - Price: \$59.99 per month with a 2-year contract., AND customer must also be a Verizon voice customer. OR \$79.99 per month with a 1-year contract.
    - \$25-\$35 activation fee
    - \$175 early termination fee.
    - Numerous taxes, surcharges and fees
- In non-Rev A coverage areas (available to 67 million additional people)
  - Download Speed: 400-700 kbps
  - Upload Speed: 50-70 kbps
  - Price: Same as above
- Service restrictions:

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<sup>52</sup> Published offerings of Sprint, Verizon and AT&T as of April 19<sup>th</sup> 2007.

- “Examples of prohibited uses include, without limitation, the following: (i) continuous uploading, downloading, or streaming of audio or video programming or games; (ii) server devices or host computer applications, including, but not limited to, Web camera posts or broadcasts, automatic data feeds, automated machine to-machine connections or peer-to-peer (P2P) file-sharing; or (iii) as a substitute or backup for private lines or dedicated data connections.
- Will terminate service if you exceed 5GB per month -- or about 6 CD's worth of data (800MB each).

## AT&T

- (No mention of Rev A deployments)
  - Download Speed: 400-700 kbps
  - Upload Speed: 50-70 kbps
  - Price: \$59.99 per month with a 2-year contract AND subscription to a voice plan that's at least \$39.99 per month. OR \$79.99 per month with a 1-year contract.
    - \$36 activation fee
    - \$175 early termination fee.
    - Numerous taxes, surcharges and fees
- Service restrictions:
  - “PROHIBITED USES INCLUDE, BUT ARE NOT LIMITED TO, USING SERVICES: (I) WITH SERVER DEVICES OR WITH HOST COMPUTER APPLICATIONS, INCLUDING, WITHOUT LIMITATION, WEB CAMERA POSTS OR BROADCASTS, CONTINUOUS JPEG FILE TRANSFERS, AUTOMATIC DATA FEEDS, TELEMETRY APPLICATIONS, PEER-TO-PEER (P2P) FILE SHARING, AUTOMATED FUNCTIONS OR ANY OTHER MACHINE-TO-MACHINE APPLICATIONS; (II) AS SUBSTITUTE OR BACKUP FOR PRIVATE LINES OR DEDICATED DATA CONNECTIONS; (III) FOR VOICE OVER IP”
  - **“UNLIMITED PLANS CANNOT BE USED FOR UPLOADING, DOWNLOADING OR STREAMING OF VIDEO CONTENT (E.G. MOVIES, TV), MUSIC OR GAMES.”**
  - “Service is not intended to provide full-time connections, and the Service may be discontinued after a significant period of inactivity or after sessions of excessive usage. Cingular reserves the right to (i) limit throughput or amount of data transferred, deny Service and/or terminate Service, without notice”

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<sup>1</sup> Free Press is a national, nonpartisan organization with over 350,000 members working to increase informed public participation in media and communications policy debates.

<sup>2</sup> Consumers Union is a nonprofit membership organization chartered in 1936 under the laws of the state of New York to provide consumers with information, education and counsel about good, services, health and personal finance, and to initiate and cooperate with individual and group efforts to maintain and enhance the quality of life for consumers. Consumers Union's income is solely derived from the sale of *Consumer Reports*, its other publications and from noncommercial contributions, grants and fees. In addition to reports on Consumers Union's own product testing, *Consumer Reports* with more than 5 million paid circulation, regularly, carries articles on health, product safety, marketplace economics and legislative, judicial and regulatory actions which affect consumer welfare. Consumers Union's publications carry no advertising and receive no commercial support.

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<sup>3</sup> The Consumer Federation of America is the nation's largest consumer advocacy group, composed of over 280 state and local affiliates representing consumer, senior, citizen, low-income, labor, farm, public power and cooperative organizations, with more than 50 million individual members.